MIDWEST DEALER ISSUE
Pages 8-25

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Education Key to Fall Fertilization Progress

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—Expansion of fall fertilization crops, one of the goals of the plant food industry, involves a slowly developing educational process among farmers, industry experts here tell Croplife.

All of the industry specialists believe that it is an attainable goal, but that it will take an uphill fight. They have the backing of many agronomists.

Much of the resistance to fall fertilization among farmers must be attributed to inertia and the ever human unwillingness to adopt innovations from age-old practices. In addition, it is suspected that the front lines sales army of the industry, the dealers, are unwilling to go all out in the educational programs necessary to build farmer acceptance of fall fertilization practices.

Notwithstanding some of the natural obstacles in the path of fall fertilization, progress is being made steadily but slowly each year. Considerable tangible progress in experimental farm work in fall fertilization is found in the efforts of state college experiment stations, industry officials here note. An outstanding example is work by Iowa State University.

U.S. Department of Agriculture economists in the Land and Soil Use Division say that except in the very sandy soils, lands in the humid areas lend themselves well to fall fertilization of many crops.

Topping the list of best crop prospects for fall fertilization is pasture, and in the Corn Belt treating the corn stalks with nitrogeneous plant foods before plowing under the stalks. The plowed under stalks tend to fix the nitrogeneous materials in the soil during the winter and reduce leeching of the material.

Also USDA experts contend that as science develops nitrogen of a more stable character at lower prices the practice of fall fertilization will proceed rapidly.

Fall fertilization can be performed at the fall season thereby spreading the planting season labor peak at a time when the producer may find some good use for his less urgent demands for field labor.

For dealers everywhere study of fall fertilization uses should be a must in their calendars. In many instances it is noted that sales efforts are concentrated on the immediate, and not enough thought and effort is being given to the long range building of customers.

Fall fertilization may not be just around the corner for the entire farm plant of the nation. But that corner may not be as far away as many suspect.

The dealer who has not pioneered the fall fertilization deal may awaken to find that he has missed the parade or at least was not around when the big brass instruments went by the reviewing stand.

Hopper Control Program in West Nears Completion

DENVER — The grasshopper control programs in Colorado, Kansas and Oklahoma have been completed. A total of 530,658 acres were sprayed in the three states. Although Colorado's program was hampered by poor weather conditions the final results were quite satisfactory according to F. Herbert Gates, chief of the state's plant industry division.

There is still some spraying to be done in New Mexico, Texas and Wyoming, but bulk of the acreage in this area has been covered. There also may be more acreage added in Montana, Oregon and Idaho before the program is completed for the year.

There was a total of 894,101 acres sprayed in Colorado, Kansas, New Mexico, Oklahoma, Texas and Wyoming by July 6. An additional 895,200 were to be sprayed in some of those states and California, Idaho, Montana, Nevada, Oregon, Utah and Washington.

★ ★ ★

SPECIAL FALL FERTILIZATION ISSUE

A special section outlining the advantages and opportunities of fall fertilization appears in this issue of Croplife. It includes articles by experiment station agronomists, questions and answers on the topic, a summary of sales helps available to dealers and other information. Croplife editors hope that this issue will be useful to manufacturers, distributors and retailers in giving fall sales a big push this year. Much of the copy is designed for use in the actual over-the-counter sales talks with farmers. Some can be posted on the bulletin board. Some can be worked into newspaper advertisements or in direct mail. You'll find the special section on pages 8-25.

Panel at Pacific Branch of ESA Calls For Streamlining of Pesticide Labels

BERKELEY, CAL. — Streamlining and simplification of pesticide labels and directions are needed if the Miller Amendment to the Food and Drug Act is to be fully effective.

This was the consensus of four experts representing the U.S. Department of Agriculture, the U.S. Food and Drug Administration, the California Department of Agriculture, and the National Agricultural Chemicals Assn. They addressed the recent meeting here of the Pacific Branch of the Entomological Society of America.

Two major problems from the USDA point of view are lack of residue information and the need for evaluating labels to be sure they comply with the law, according to J. T. Coyne, assistant head of the Pesticide Regulation Section of USDA.

Because of lack of data, Mr. Coyne said, "the status of many uses of pesticide chemicals remains undetermined. Unless the status of these uses can be clarified, the end result will be that in the 1957 growing season many materials of proven value to growers will not be legally available."

The second major problem, he said, is to evaluate existing directions to determine their compliance with the law. More than 34,000 labels are registered with the USDA and of these many frequently bear directions which differ from those in petitions

(Continued on page 29)

Eastern Canada Plant Food Producers Hear Pointers on Profitable Farm Production

MONT TREMBLANT, QUEBEC—Speakers discussed plant nutrient problems vital to a profitable Canadian agriculture at the 11th annual convention of the Plant Food Producers of Eastern Canada at the Mont Tremblant Lodge, Quebec, recently before a record attendance of 250 members and guests from Canada and the U.S.

Speaking at the annual banquet, J. S. Barry, director of the Production Service, Department of Agriculture, Ottawa, emphasized the growing importance of fertilizer problems in Canadian agriculture and the need for a very careful study of the provisions of the Fertilizer Act under which fertilizers are sold to farmers.

Dr. Russell Coleman, executive vice president of the National Plant Food Institute, Washington, D.C., in reviewing present fertilizer usage

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USDA Gives Added Emphasis to Medfly Control Campaign

WASHINGTON—Evidence that the United States Department of Agriculture is going after the Medfly infestation in Florida hammer and tongs is found in a recent recommendation to Congress by the chief executive for an appropriation of an additional $2.5 million to expand the campaign in newly infested areas.

USDA officials in charge of the operations of the Florida campaign say that they now expect to be in the Medfly business for some months ahead. This additional money is seen as necessary to fortify and protect money already spent. USDA does not want to find itself in the unfortunate position of having halted the Medfly in the counties where originally found only to have it break out in other isolated points.

It also has been learned at USDA that the Bureau of Entomology has undertaken an extensive study of the effectiveness of several soil insecticides in Medfly control. If this study shows favorable results, new pesticide weapons will be added to the fight.

Earlier optimism at USDA that this pest would be under control within 90 days should not be discounted because of the request for more money. On the other hand USDA says that the additional money is an insurance program to close every gap and nail down the best effects of the present campaign in the originally infested counties.

However, USDA officials now believe that the campaign to eradicate the Medfly will be a longer job than first anticipated.

Firm Files Charter

DOVER, DEL.—Gildersleeve Fertilizer Co., with authorized capital stock of $150,000, has filed a charter of incorporation in Delaware.

Hooker Electrochemical, Oldbury Negotiating For Merger

NEW YORK — The officers of Hooker Electrochemical Co. and Oldbury Electro-Chemical Co., both of Nigara Falls, N.Y., have announced that they are negotiating for a merger of Oldbury Electric-Chemical Co. into Hooker Electrochemical Co. by the issuance of 450,000 shares of Hooker common stock in exchange for the 10,000 shares of Oldbury presently outstanding.

Should the current negotiations result in an agreement approved by the boards of directors of both companies, it is anticipated that the proposal will be submitted to the stockholders of both companies at special meetings to be held this fall.

Oldbury's principal products are phosphorus, phosphorus derivatives, chlorates and perchlorates and oxalic acid, none of which are produced by Hooker. Thus the consolidation will result in broadening Hooker's basic product lines. In 1955, as a result of consolidations with Durez Plastics & Chemicals, Inc. and Niagara Alkali Co., Hooker became one of the principal producers of phenolic resins and plastics, caustic potash, potassium carbonate and trichloroethylene.

Oldbury's main plant is situated adjacent to Hooker's Niagara Falls plant. A second recently completed plant is located at Columbus, Miss. Oldbury stock is closely held and is not listed.

TOPDRESSING PAYS

ST. PAUL—In five years at the University of Minnesota Rosemount agricultural experiment station, 200 lb. of 0-20-0 per acre topdressed each spring yielded 18.9 tons of hay. The same application of 0-20-20 produced 20.9 tons of hay. Unfertilized alfalfa produced 16 tons of hay, say University soils men.

Minnesota Fertilizer Results Reported

MORRIS, MINN.—Alfred C. Caldwell and Lowell Hanson, University of Minnesota soils scientists, have reported first-year results from fertility trial plots at the Morris station. Alfalfa plots that got only 40 lb. of potash per acre averaged 1.3 tons of dry hay per acre for the first cutting. Plots that received just 20 lb. of nitrogen yielded 1.63 tons of alfalfa, but the plots that received 80 lb. of phosphate averaged 2.22 tons of dry hay per acre.

Yields were even better on fields that got complete fertilizer treatments, the soils men said. Where the application rate was 20 lb. of nitrogen, 80 lb. of phosphate and 40 lb. of potash per acre, hay yields averaged 2.41 tons. Yields averaged 2.5 tons per acre on plots that got 21 lb. nitrogen, 60 lb. of phosphate and 80 lb. of potash on each acre.

Lester Ginsburg

Lester Ginsburg Named Director Of Escambia Bay

NEW YORK—Lester Ginsbu vice president of Electric Bond a Share Co., has been elected to t board of directors of Escambia B Chemical Corp., Robert U. Haslang president, announced recently.

Escambia Bay Chemical Corp. owned jointly by Electric Bond a Share Co., New York, United G Corp., Shreveport, La., and Nation Research Corp., Cambridge, Mass.

Escambia Bay Chemical is n producing ammonia, nitric acid, a monium nitrate and nitrogen fer lizer solutions at its plant near Pe sacola, Fla.

Construction is underway at t same site for a 30 million pou polyvinyl chloride resins plant to completed in the fourth quarter this year.

Mr. Ginsburg is also a director Electric Bond and Share Co., Ame can & Foreign Power Co., Inc., a Ebasco Services Inc., wholly own engineering, construction and bu ness consulting subsidiary of Electr Bond and Share.

USDA Permits Grazing On Soil Bank Land

WASHINGTON — Because of s vere drouth conditions, True Morse, acting secretary of the U Department of Agriculture, has d termined that there is need f emergency grazing on soil bank acr age reserve land in certain areas Colorado, Kansas, Texas, Utah a New Mexico.

The action was in accordance wi the soil bank law, and followed cer fication by governors of states i volved that such action was nece sary. Permission to graze on the acr age reserve lands extends until Se 30, 1956, in those sections of the fi states which already have been d clared "disaster areas" under Pub Law 875.

The authorizations to the governo emphasize the fact that grazing acreage reserve lands is "expres prohibited" outside the designat disaster areas of the states.

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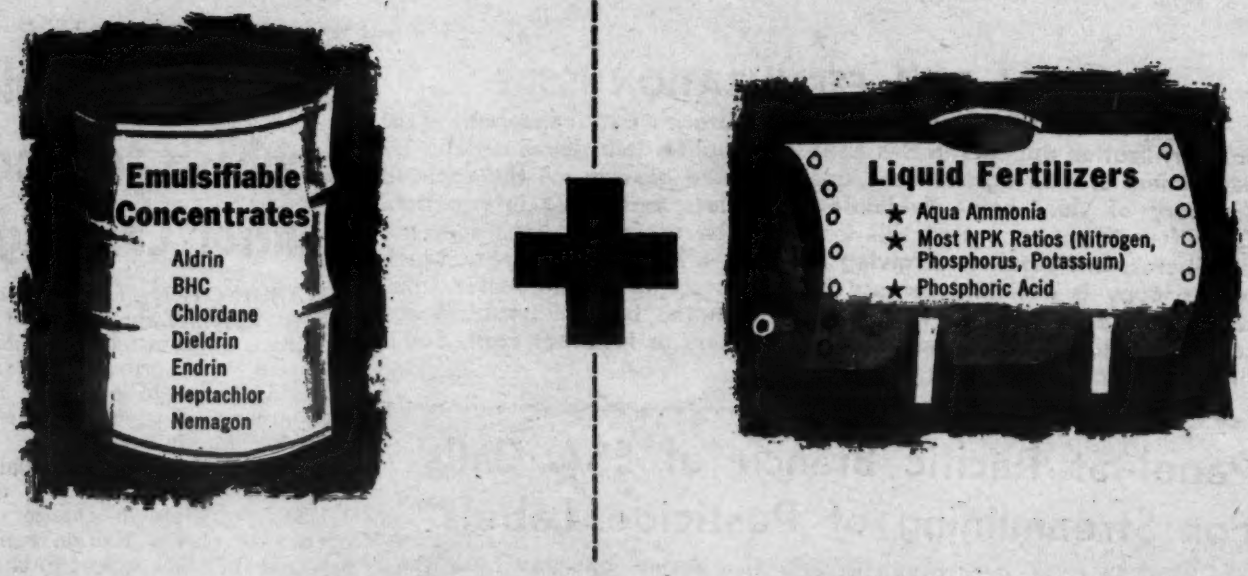

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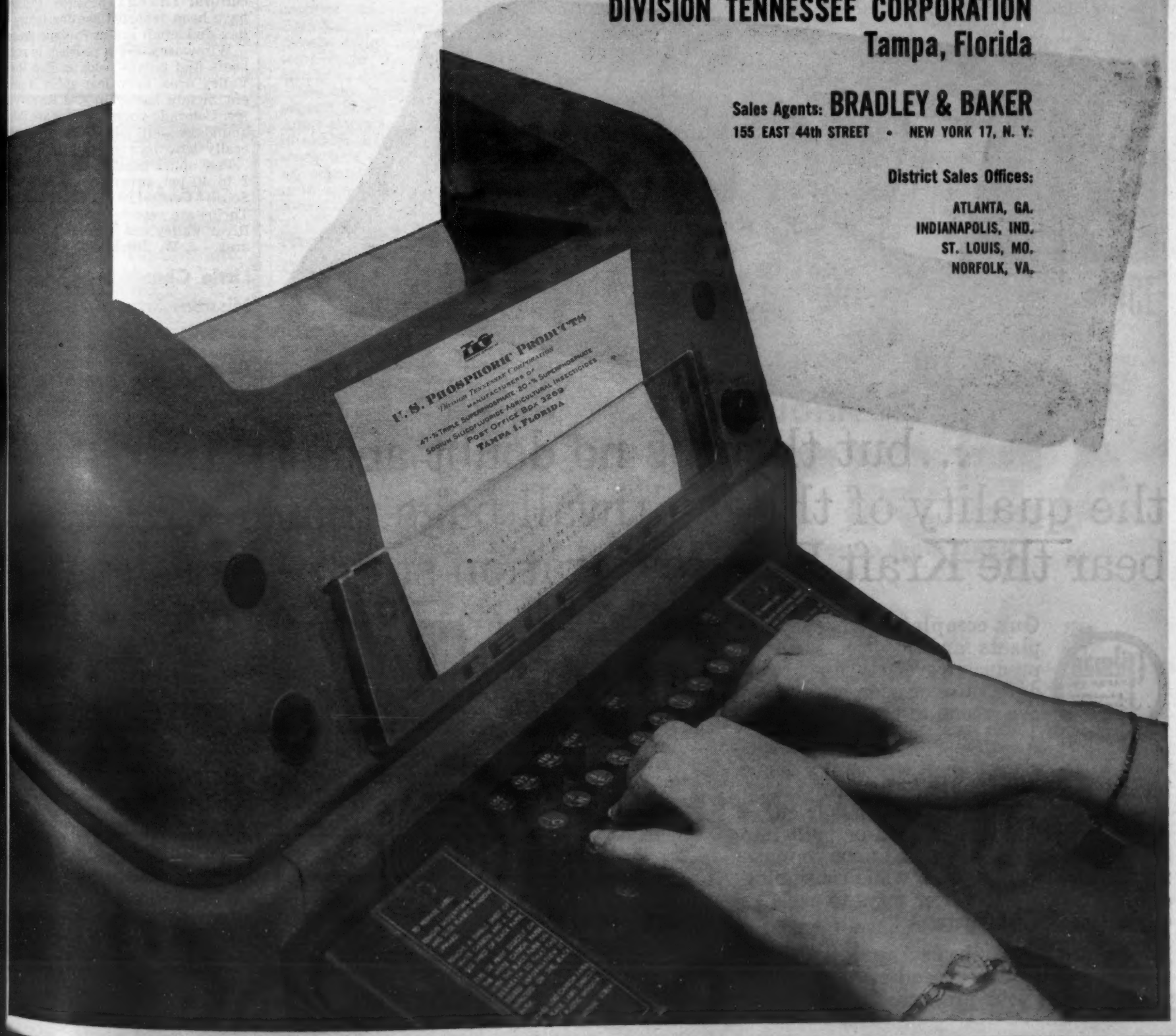


INSECT AND PLANT DISEASE NOTES

Mexican Bean Beetle Reported in Colorado

FORT COLLINS—Four Colorado counties have reported heavy damage to field and garden beans by the Mexican bean beetle, according to the latest Colorado Insect Detection Committee report.

The four counties are Larimer, Weld, Adams and Boulder, according to Dr. L. B. Daniels, committee chairman and chief entomologist for the Colorado Agricultural Experiment Station. Dr. Daniels points out that heavy deposits of eggs have been noted and recommends early treatment with insecticides.

Northeastern Colorado reports considerable "psyllid yellows" showing up in potatoes and tomatoes. Psyllid populations have been much higher than in past years.

A marked increase in numbers of sugar beet webworms is indicated by light trap collections in Larimer and Otero counties but a small decrease has taken place in Saguache County.

Weld and Boulder counties' canning industries report as much as 20 percent of the canning tomatoes are infested with "Western yellow blight," a curly top virus of sugar beets transmitted by the leafhopper.

Heaviest populations of spotted alfalfa aphid center around Hartman in Prowers County. But the pea aphid continues to overshadow the spotted alfalfa aphid, entomologists report.

Adams County has reported damaging numbers of onion thrip on corn, beans and cucumbers.

Noticeable increases in emergence of wire worm adults is shown by light trap collections in the Greeley area of Weld County and the Longmont area of Boulder County. A slight increase also was noted near Rocky Ford in Otero County. Greeley and Rocky Ford areas also show aster leafhopper on the increase. The aster leafhopper has shown its greatest increase in the New Liberty area of Mesa County, however.

The Great Basin tent caterpillar is causing heavy defoliation to aspen in Huerfano County in the San Isabel National Forest. In the same area, infestations of the Black Hills beetle are at a low level, despite emergence earlier than usual. Peak of emergence of Engelmann spruce beetle apparently was reached the last week of June and the first week of July.

Codling Moths Active in Indiana

VINCENNES, IND.—Codling moth emergence records indicate that moths are now (July 17) emerging from larvae that left the apples between June 25 and July 2. First brood adult activity has dropped extensively since July 8 so that the peak of second-brood larval entry is probably past, although this varies extensively from orchard to orchard as it is influenced by weak spots in the first-brood spray protection. Tetranychus sps. mites are becoming more abundant in this area. In many orchards populations are still confined to the lower branches and are generally heaviest near the tree trunks.—D. W. Hamilton.

Chinch Bug Migrations Reported in Illinois

URBANA, ILL.—Chinch bug migrations from small grain to corn have been reported from several areas. This is particularly true in the area bounded by a line from North Cook County to North LaSalle County to Peoria to Champaign.

Small grasshoppers are abundant in many localities in the western and northern parts of the state. Occasional fields of alfalfa are infested with leafhoppers, and some yellowing and stunting of growth have occurred.—H. B. Petty.

Grasshopper Number One Problem in Minnesota

ST. PAUL—Grasshoppers continue to be Minnesota's number one agricultural insect problem. Crickets have been reported causing injury to flax and small grains in some areas.

Wireworms are a problem in sugar beets and potato fields in Red River Valley area. Corn leaf aphid is present in late barley in Red River Valley. Colorado potato beetles are fairly abundant, but populations are generally less than in 1955.

Pea aphid populations range from 1 to 40 per sweep in the Southeast, South Central and Central areas. Thrips are reported on barley in Red River Valley and on oats in southern area.—J. W. Butcher.

Little Change in Missouri Situation

COLUMBIA, MO.—The general insect situation has changed little during the week ended July 14. Crops continue to look exceptionally good and for the most part, insect damage is low.

Hoppers are still the most important threat, but it begins to look as though we will not have damage as extensive as occurred in 1954. There is still time for trouble this year, however, if we should run into a period of hot, dry weather. Actually the tremendous increase in early season spraying this year has helped immeasurably in keeping hopper damage relatively low.

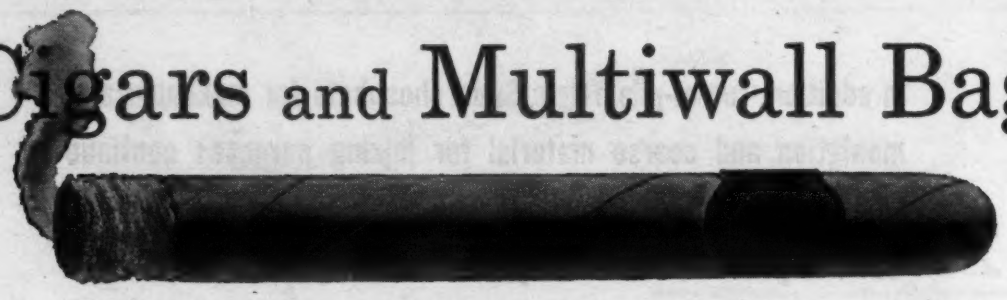
We are finding a scattering of corn leaf aphids on both corn and grain sorghums. Blister beetles are still working in both crops and vegetables. Spider mites are beginning to show up on some vegetables—particularly beans—and on some ornamentals. In some sections of the state they are also working soybeans. In Southeast Missouri bean leaf beetles are working soybeans.—Stirling Kydland.

Peanuts, Tobacco, Cotton Insects in Georgia

ATHENS, GA.—Light infestations of the red-necked peanutworm were found in Worth, Dougherty, Colquitt and Cook counties in the week ended July 13.

Colquitt, Cook and Berrien counties had moderate infestations of hornworms and light to moderate infestations of cabbage loopers. Green peach aphid was moderate in Col-

Cigars and Multiwall Bags



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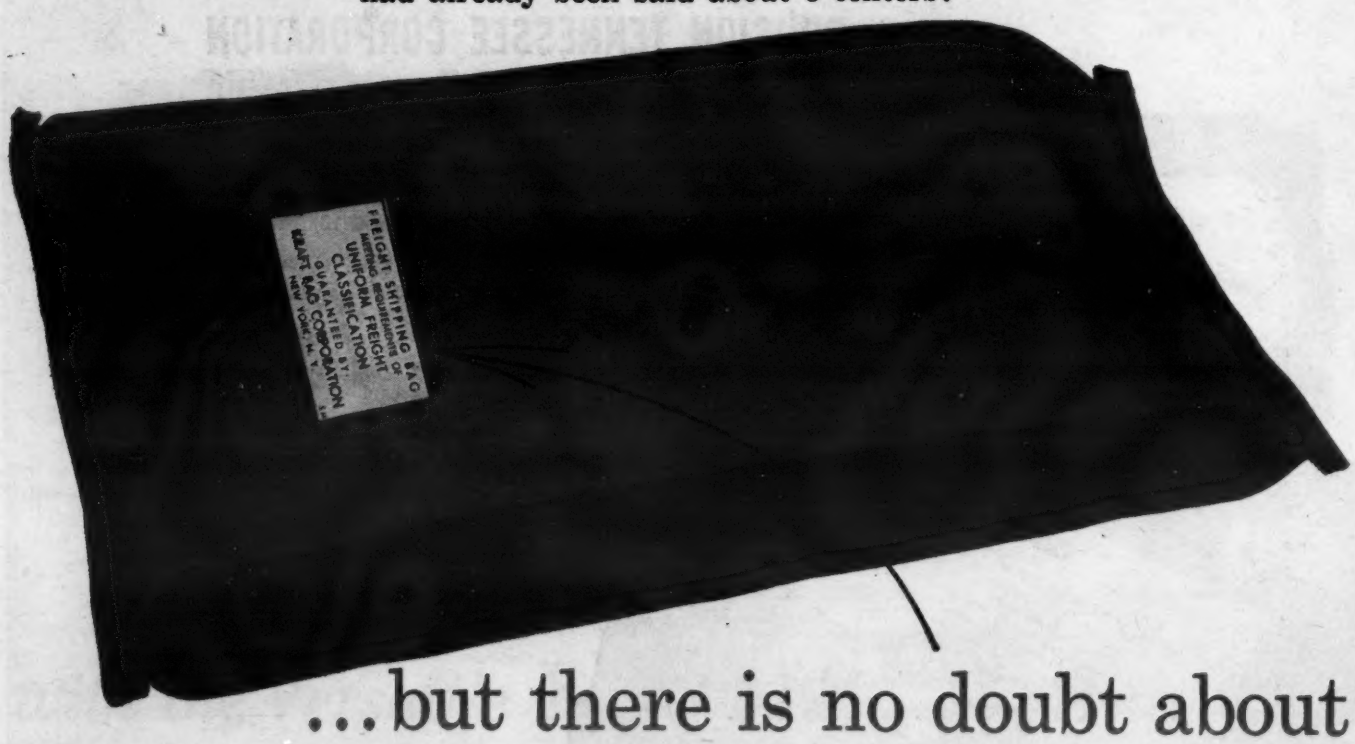

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uitt and Cook counties and light in errien. Light infestations of the obacco flea beetle were reported in offee, Jeff Davis, Toombs and manuel counties.

The average boll weevil infestation r all fields surveyed was 34% punc- ured squares. The average bollworm festation for surveyed fields was o worms per 100 terminal buds.

Light to moderate aphid (plant ce) infestations were noted in umter, Lee, Dougherty, Worth, Col- uitt, Cook, Berrien, Coffee, Jeff avis, Toombs, Emanuel and Han- ock counties, with a heavy infesta- on in Washington County. Spider ites were moderate in Taylor Coun- .—W. C. Johnson.

otton Insects Active n North Carolina

RALEIGH, N.C.—The North Caro- na Cotton Working Committee re- orts that boll weevils are threaten- g in areas where very little ac- ivity was noted earlier this year. ollworms are showing up in many ounties, but are not (as of July 13) general threat to the cotton crop.

Mites or spider mites are present many counties. In most areas the festations are spotted. If the weath- remains warm and there are not requent rains, red spiders or spider ites could be a real problem, the ommittee says.

lant Diseases roublesome in Virginia

BLACKSBURG, VA.—S. B. Fenne, lant disease specialist at Virginia olytechnic Institute, has pinpointed few of the current plant disease roblems in Virginia.

On wheat, some helminthosporium ot rot and quite a lot of anthrac- ose has been reported. "Take-all" as occurred in several counties. The most serious ailment with oats has been victoria blight.

Unfavorable growing conditions caused by cool weather have resulted in damage to corn. Most of the diseased specimens of flowers received in VPI laboratories have shown varying degrees of root rot. Several flowers have also been affected with various leafspots. Most of the leafspot troubles can be effectively controlled by following a definite spray or dust program, Mr. Fenne says.

Miscellaneous Insects Noted in Delaware

NEWARK, DEL.—Potato leafhoppers are abundant generally on beans, especially on limas. Beans also are plagued by an increasing number of aphids, and the Mexican bean beetle is primarily troublesome in small plantings.

The corn borer, earworm, fall armyworm, Japanese beetles and sap beetles are very active on corn. Grasshoppers and Japanese beetles are feeding on soybeans at many points.

Recent cool, wet weather has provided ideal conditions for the development of both early and late blight. Early blight was found on tomatoes the week ended July 13.—L. A. Stearns and J. W. Heuberger.

Iowa Hoppers Getting Bigger, Eating More

AMES, IOWA — Grasshoppers are getting bigger and eating more. The lesser migratory hoppers are all adult. Damage is quite obvious.

Northern corn rootworm adults were seen in Tama and Marshall counties the week ended July 14. Corn leaf aphids are present in many tassels—rolled up or emerged. In some cases there are 50 or more aphids in unemerged tassels.

Meadow spittle bug adults are present now in all eastern counties. Adult clover leaf weevils are present in alfalfa and clover throughout the south half of Iowa. Potato leafhopper populations are building up rapidly in new seedings.—Harold Gunderson.

Heavy Hornworm Outbreak in Maryland

COLLEGE PARK, MD.—European corn borer eggs of the second generation have begun to appear on corn on the Eastern Shore but, except in home gardens, the infestation is light. Corn earworm numbers are light on the Eastern Shore. Sap beetles are abundant and are laying eggs in the silk of corn.

In Wicomico County there has been local damage to soybean field borders from grasshoppers. Potato leafhoppers were causing injury to alfalfa in the week ended July 13. There has been a general heavy outbreak of hornworms on tobacco in all tobacco growing counties. It is the heaviest in years. In untreated fields damage is from 90 to 100%.—Theodore L. Bissell.

Cereal, Forage Crop Insects in Kansas

MANHATTAN, KANSAS—Threatening to severe grasshopper populations were observed in localized areas of Riley, Geary, Dickinson and Ottawa counties in the week ended July 14. Garden webworm infestations were causing damage to alfalfa fields in Comanche and Osborne counties.

Corn billbugs apparently destroyed most of one early-planted field of corn in the Arkansas River Valley in Sedgwick County. Blister beetles were observed causing considerable damage to both soybeans and alfalfa in rather general areas in Bourbon and Labette counties.

Corn leaf aphids have been reported from many areas of the state, particularly in central and north central areas. European corn borer infestations in Doniphan and Jefferson counties ranged from 2 to 12%. Near St. John, Stafford County, southwestern corn borer infestations ranged to highs of 30%.

Fall armyworm infestations were found in corn fields of Barber, Stafford, Reno and Harvey counties. Infestations ranged from 2 to 12%. Reports of chinch bug injury to corn and milo continue to be received by a few county agents throughout the central area of the state. Plant bugs were numerous in alfalfa fields checked in Geary, Riley, Dickinson and Ottawa counties. — Dave Matthew.

Boll Weevils Causing Damage in Tennessee

KNOXVILLE — Boll weevils are causing considerable damage in the heavily infested counties. Conditions have been ideal for the second generation, and they should start emerging by the latter part of the week beginning July 23.

There should be enough weevils by the second generation to cause some migration to fields that are not so heavily infested. Counts made in the infested fields showed an average of 28% in the week ended July 20, compared with 35% the week earlier. If conditions continue to be favorable as they have so far this season, damage is expected to continue.

Bollworms are causing some damage in scattered fields over the area. Flea hoppers have been found in limited numbers, but damage is light. Plant bug damage is very light.

—R. P. Mullett.

Wheat Support

WASHINGTON—The U.S. Department of Agriculture has announced a $2 bu. price support for wheat from the 1957 crop on a national average basis. This is the same level which

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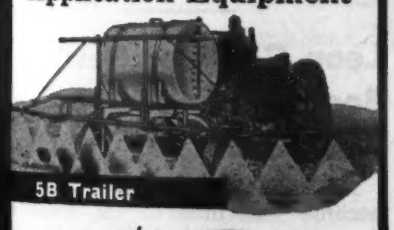
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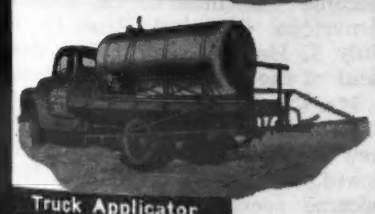
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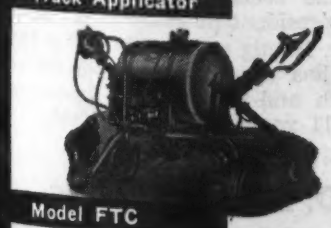
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HEPTACHLOR POSTER—This outdoor poster is being used by Velsicol Chemical Corp., Chicago, on a group of billboards in the Rio Grande Valley in Texas. The poster utilizes the same message and illustration contained on the Heptachlor cotton insect window streamer which is being used extensively throughout the South. This same sales message appears in Spanish on masonry outdoor sign structures in Northeast Mexico. Velsicol is the exclusive manufacturer of technical Heptachlor.

Atlas Powder Names Chemicals Field Sales Manager

WILMINGTON — Atlas Powder Co. has appointed Dixon C. Van Winkle to the newly-created post of field sales manager for its chemicals division. Mr. Van Winkle, who has been manager of the firm's New York chemicals sales office, now will make his headquarters in the Wilmington general offices.

According to Edward J. Massaglia, the chemicals division's general manager for operations, the new field sales function will permit closer coordination of the company's 10 chemicals sales offices located in various parts of the country.

Other major objectives of the change, he said, include better integration of marketing programs, improved servicing of national as well as local accounts and more effective recruitment and training of chemical sales personnel.

Mr. Van Winkle joined Atlas in 1952 as a special sales assistant in the chemicals division and has been manager of the New York office since 1954.

Succeeding him will be Henry C. S. Swab, now technical representative in Atlas' San Francisco chemicals sales office. Edward J. Costello, who has been handling West Coast technical correspondence in the Wilmington general offices, replaces Mr. Swab in San Francisco.

DISEASE CONTROL

CORVALLIS, ORE. — Control of diseases of fruit trees and mint fields are being spotlighted July 26 at the second annual field day at the Oregon State College plant pathology farm, according to Iain MacSwan, plant pathology specialist.

C. Y. Haas

C. Y. Haas Named to New Post by Minerals & Chemicals

MENLO PARK, N.J.—C. Y. Ha has been appointed manager of sor tive mineral sales of Minerals Chemicals Corporation of Americ it has been announced by R. H. Hu bell, Jr., vice president and direct of sales.

Mr. Haas joined Minerals & Chem cals in charge of agricultural sal and sales development in 1946 aft four years' service as a captain wi the 7th Infantry Division in t Pacific Theater. He is a gradua chemical engineer from Lehigh Un versity and had been with Es Standard Oil prior to World War I

Mr. Haas was manager of the tec nical division and subsequently a sistant director of research wi Minerals & Chemicals prior to th new appointment as manager of sor tive mineral sales.

His department handles the sal of Minerals & Chemicals Attapulgi products and Porocel activated bau ites to the insecticide-pesticide indu try, petroleum refining and to th oil well drilling industry.

Leon Cherksey New Board Chairman of American Chemical Pain

AMBLER, PA. — Leon Cherkse became chairman of the board American Chemical Paint Co. o July 1. He was succeeded as pres dent of the firm by Gerald C. Romig

Mr. Cherksey is the first officer i the company's history to serve in th new capacity of chairman of th board. He joined the firm in 191 became secretary-treasurer in 193 and president in 1939.

Mr. Romig came with ACP in 192 and has spent 18 years in the re search and development departmen and 11 years as vice president.

G. D. Baerman Heads Insecticide Sales for Olin Mathieson

NEW YORK—G. D. Baerman ha been appointed director of sales fo the Insecticide Division of Oli Mathieson Chemical Corp., R. J Zipse, division general manager, ha announced. Mr. Baerman had bee general sales manager.

Mr. Zipse also announced thes changes: Paul H. Williams formerly assistant sales manager, t general sales manager, Davis J Walsh, formerly assistant sales man ager, to assistant general sales man ager, and Douglas M. Malcolm, for merly Midwest sales manager, t sales correspondent in the division' headquarters offices at Baltimore.

Farm machinery & equipment advertisers—prefer Successful Farming!

Advertising pages—Farm machinery and equipment manufacturers

	1955
SUCCESSFUL FARMING	130.40
Capper's Farmer	116.16
Farm Journal	105.47

The preference of the farm machinery and equipment makers for SUCCESSFUL FARMING is natural enough. SF farmers own more than one-third of all the farm tractors used in this country—average 1.3 per farm; and have almost half the grain combines, hay balers, milking machines.

Their average holding is 285.8 acres. They raise more than 53% of the US total of corn harvested for grain, 57% of the hogs, 38% of the cattle and calves, 33% of the poultry and poultry products, 44% of the dairy products.

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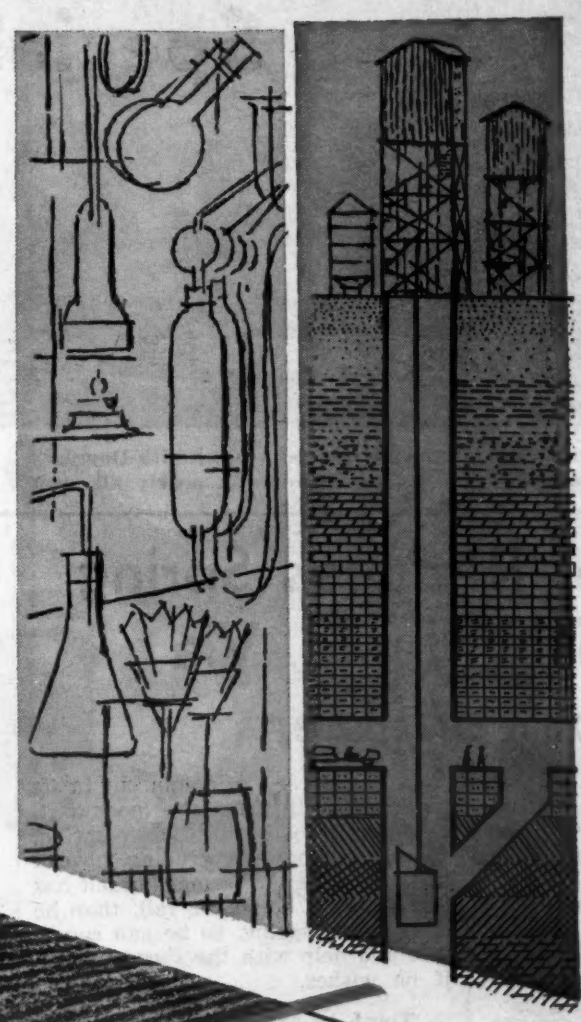
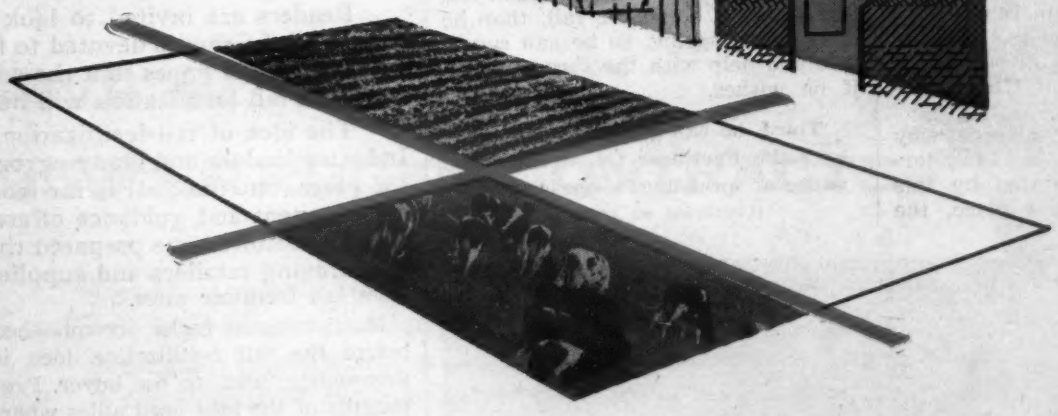
NATIONAL'S mining operations and refining processes will include the very latest industry techniques, and its storage and shipping facilities have been planned to meet efficiently the demand of the peak fertilizer season.

In addition, NATIONAL POTASH provides a free, comprehensive Technical Service to help manufacturers with granulation, formulation and other production problems. Write for complete information.





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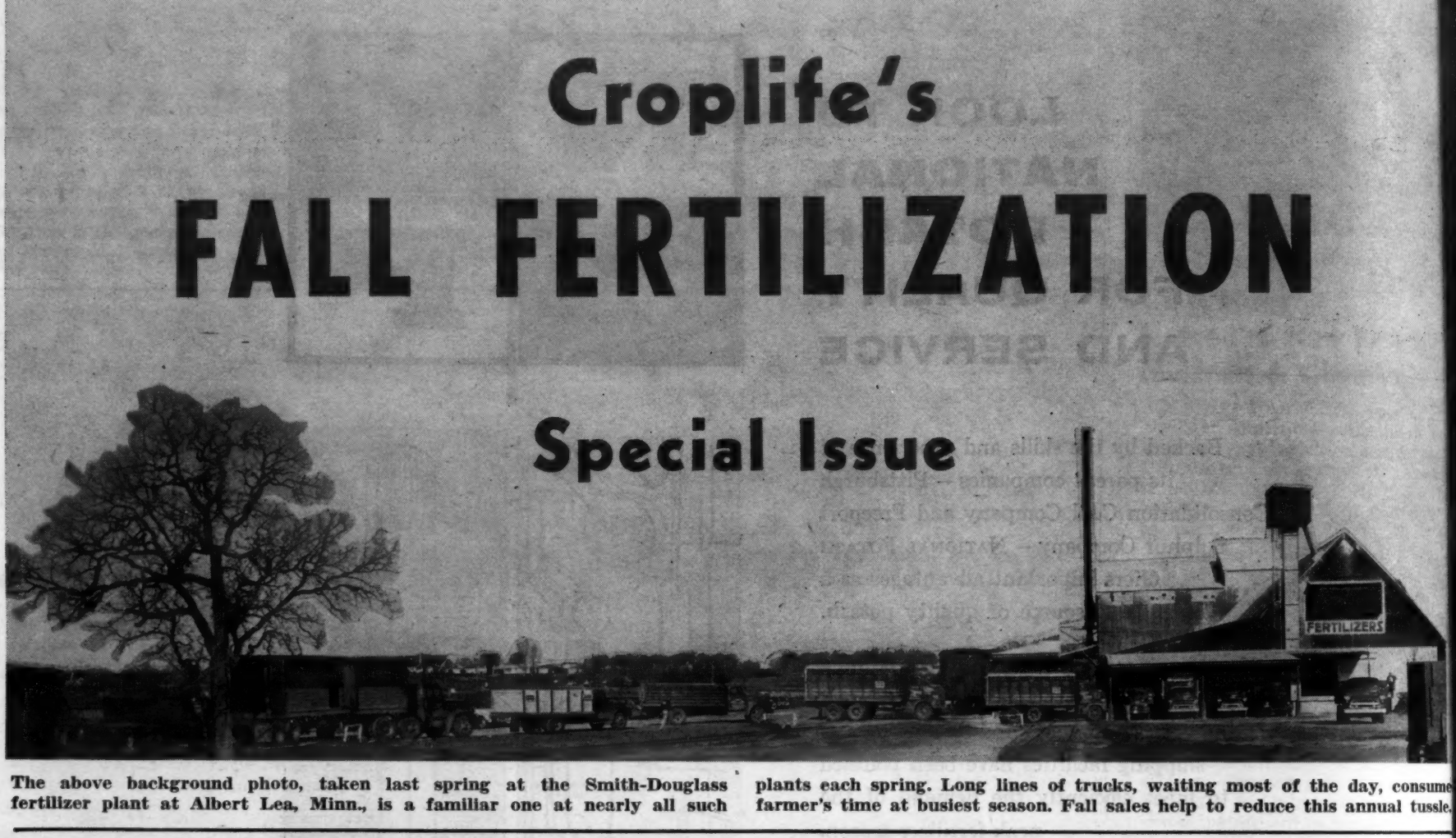

The above background photo, taken last spring at the Smith-Douglass fertilizer plant at Albert Lea, Minn., is a familiar one at nearly all such plants each spring. Long lines of trucks, waiting most of the day, consume farmer's time at busiest season. Fall sales help to reduce this annual tussle.

Iowa Dealer Reduces Spring Rush, Builds Volume, Via Fall Sales of Fertilizer

An example of what can be done to increase the fall purchase and application of fertilizer is shown at the Lake Fertilizer Co., Storm Lake, Iowa. This company, through advertising and aggressive merchandising has gotten many farmers into the "fall fertilizer" habit. According to W. B. Bauer, president, the customers like it.

There are several reasons why farmers have taken to the "fall fertilizer habit" as advocated by this retail firm. In the first place, the Lake Fertilizer Co. points out in its advertising, that for the most part, fields are drier in fall than in spring, therefore a better spreading job can be done. Also, the farmer himself has less work to do in the fall, than he does in the spring, so he can supervise and help with the spreading job if he wishes.

Third, he can get his soils tested by Lake Fertilizer Co. well in advance of spreading, a service which

(Continued on page 24)

"OUR SPREADER TRUCKS ARE READY"—Thus advertises the Lake Fertilizer Co., Storm Lake, Iowa, in its newspaper space during the fall season. This appeal, emphasized by photos like the one above, showing the equipment to be used for the job, has helped put over the idea of applying plant food materials in the fall of the year in this Iowa community.

SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Readers are invited to look over carefully the special section in this issue of Croplife devoted to fall fertilization. The section has been prepared in the hopes that the educational campaign to emphasize the merits of fall fertilization will be aided and strengthened.

The idea of fall fertilization, of course, is not a sudden thought. Industry leaders and many agronomists have campaigned for the idea for years, but the goal is far from being reached. Spurred by the encouragement and guidance offered by these leaders and agronomists, Croplife editors have prepared the section to take another step toward encouraging retailers and suppliers to gain the many benefits possible from fall fertilizer sales.

Much remains to be accomplished before the fall fertilization idea is thoroughly "sold" to the buyer. Proponents of the idea need allies wherever they can be found.

The sight of trucks lined up in front of the fertilizer warehouse, so graphically illustrated elsewhere on this page, is still engrained deeply in the minds of many a dealer and supplier. These dealers and suppliers, if located in areas where fall fertilization is practical and recommended, can rightfully voice the complaint: "If I could only spread my business over the fall months instead of crowding 80-90% of it into a few short weeks in spring." Perhaps they can do something about it!

Time goes on and the inertia to buy fertilizer in spring persists. The articles and features in this section are offered in the hopes that they will to some measure, help overcome some of the inertia.

An Iowa dealer who has successfully established the "fall fertilizer habit" is the subject of one article in the section and we feel that it is well worth reading. It's a "how-to-do-it" type of article which other dealers can use as an example of what can be done.

(Continued on page 15)

EDITOR'S NOTE

Because of the special copy on fall fertilization in this issue of Croplife, many of the regular retail dealer section features are missing. These include Oscar & Pat, Farm Service Data, Bug of the Week, Ringing the Cash Register, What's Been Happening and others. They will be back next week.

Illinois Agronomist Points Out Factors For and Against Application in Fall of Year

By S. W. Melsted

University of Illinois
Urbana, Ill.

Fall applications of fertilizers may ften involve some risk in the form f nutrient losses from the applied rtilizer. Some losses may occur rough leaching of the nutrients om the soil in areas of high rain- ll or from dry sandy soils. Losses ay also occur in the form of sheet osion of the surface-applied fertil- er on sloping land or land that is ozen. A loss in the efficiency of fer- lizers applied in the fall may occur rough prolonged chemical reactions ith certain soils, such as the fixation potash by soils low in potash and gh in the clay mineral Illite. In me areas the fall applications of oluble phosphates are less effective n carbonate soils than are spring pplications.

Against these possible disadvan- ages one must balance the many dvantages of applying fertilizers in he fall. Among these advantages re the lighter work schedules for he farmer in the fall, the accessi- ility of the fields to applicator quipment, and often a money dis- ount on fertilizers bought in the all. In many areas the advantages ill outweigh the disadvantages.

In any discussion of fertilizer prac- ces it is necessary to discuss nitro- n independently of phosphorus, pot- h, or limestone. Likewise, the area nder discussion should be defined. hese comments are intended to ap- y to the area which includes the orth Central States. It is further sumed that the fertilizer applica- ons are to correct soil deficiencies d not primarily for the starter fer- lizer effects.

The correct time to apply potash, osphorus, or limestone to low test- g soils, other than extremely sandy ils, is whenever the farm operator nds the time, and the necessary quipment can be taken into the field do the work. Generally speaking, makes little or no difference what me of the year such fertilizers are pplied, although their effectiveness ay be somewhat lessened on carbon- e soils or soils low in potash. On ndy soils a preference for spring pplications is usually indicated, since here could be some loss of fall-ap- ied nutrients during the winter onths. So on everything but sandy ils, anytime is the right time to pply phosphorus, potash or lime- one. Fall and winter applications these fertilizers are usually quite tisfactory.

For nitrogen, the time of applica- ion may be more critical. In gen- ral, nitrogen fertilizers should not e applied to sands in the fall. This olds true for all forms of nitrogen ertilizers.

Fall applications of all forms of ni- ogen fertilizers are permissible on e somewhat heavier textured soils ch as loam or clay soils in areas ith an annual rainfall of less than in. In these areas of lower rainfall, eavier textured soils are seldom ached and, therefore, little or no ss of any nutrient can occur. Under ch conditions, the fall applications nitrogen fertilizers are generally tisfactory.

Nitrate nitrogen fertilizers should ot be applied in the fall, even on e heavier textured soils, in areas here the annual rainfall exceeds 25 in. and where leaching of nutrients from the soil may occur. Nitrate nitrogen is not absorbed by soil colloids, so unless there is a crop on the land the nitrates can be leached from a soil during winters of heavy rainfall.

Early fall applications of such nitrogen carriers as ammonia or urea should be avoided in areas of heavy rainfall, for these forms may be converted into nitrates and thus be subject to winter leaching. Only after the soils have become thoroughly cooled in the fall is it safe to apply ammonia or urea without danger of winter leaching loss. Because the ammonia form of nitrogen can react with the soil colloids, this form will be held by the soil against the leaching action of winter rains so long as it remains in the ammonia form. However, one must be sure that the soils have cooled sufficiently to prevent the soil bacteria from converting the ammonia form into nitrate forms of soil nitrogen.

Generally speaking then, fall applications of fertilizers are not recommended for sands. On heavier textured soils in areas of low rainfall fertilizers of all kinds may be applied at any time of the year. In areas of high rainfall where leaching of the soil may occur during the winter months, the fall applications of phosphorus, potash, and limestone are generally satisfactory, but not the fall applications of nitrates or the early fall applications of ammonia or urea. After the soils have cooled in the fall, usually to about 40° F., ammonia and urea forms of nitrogen fertilizers may be applied without danger of appreciable losses due to leaching.

WINTER BARLEY

URBANA, ILL.—J. W. Pendleton, University of Illinois extension crops specialist, reports that winter barley yields of 60 to 70 bu. an acre are common in southern Illinois this year. He is recommending that farmers take a closer look at winter barley as an extra feed crop.

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Mr. Dealer— Cut out this page and pin it on your bulletin board. Information contained here is helpful to your customers.

QUESTIONS AND ANSWERS ON FALL FERTILIZATION

Q—Are all soils in the North Central region suitable for fall fertilization?

A— Yes, all but sandy soils, and these comprise only a small percentage of the total cultivated land area in the states.

Q—Can I apply mixed fertilizer in the fall?

A— You certainly may. The soils of the Midwest permit this type of fertilization without much danger of loss.

Q—Should nitrogen be applied in the fall?

A— Yes. The placement of nitrogen when plowed down may be superior to broadcast and disked-in or side-dressed nitrogen.

Q—Why bother to put on fertilizer in the fall?

A— In the first place fields are usually in better condition for applying nitrogen in the fall, than they are in the spring. It is also much more efficient for the dealer to move a larger portion of his annual fertilizer tonnage and, because of this, farmers can gain a discount by buying their plant food at the end of summer. Truckers also find it advantageous to do bulk spreading in the fall of the year while the ground is solid and it is possible to drive over fields.
Another factor is that the farm work load in the fall is usually not as heavy as it is in early summer. In other words, when fertilizer is put into the soil in the fall, it is there when the growing plants need it most.

Q—Will fertilizer applied in the fall be as effective as if it were put on in the spring?

A— Yes. Fall applications of nitrogen, phosphate and potash fertilizers have been just as efficient in stepping up corn and small grain yields as have applications made in the spring, prior to planting. However, if only starter fertilizer is being applied, spring application is considered to be more logical. Broadcasting in the fall is profitable.

Q—What if I put fertilizers on residues this fall and then plow down corn stalks, straw and other crop residues?

A— Doing this will speed up the decomposition of the organic matter, build better soil structure, and make more certain the proper feeding of the crops planted next spring.

Q—Would it do any good to apply fertilizer on my pasture land this fall?

A— If you top-dress your pastures after the grazing season, you will see them fairly jump up early next spring during the best growing weather, from the plant food you have already made available down in in the root zone.

Q—Would fertilizing this fall help to avoid winter killing of legumes?

A— An adequate supply of plant nutrients will help overcome this situation, since it adds in the accumulation of reserves through the cold months. A heavy feeder like alfalfa, particularly benefits at the end of a five ton an acre harvest season, from fall fertilization, especially with phosphate and potash. Renewing the soil's potassium and potash supply in September or October will get the stands through the winter better.

Q—Could I wait until winter to put on my fertilizer?

A— In some sections, good results have been obtained from applying plant food on snow, but soil specialists warn against risking possible run-off from rain and melting snow on frozen ground. It is better to get the plant food on before frost hardens the soil.

Q—Will I get as good a yield from corn if I put nitrogen on this fall instead of next spring?

A— Several agricultural colleges throughout the Midwest have conducted a series of tests with ammonium nitrate. On one set of plots, they plowed the fertilizer under in the fall. On adjacent plots, they disked it in during the spring. When they compared yields between the two plots, they found that it made no difference at all whether ammonium nitrate was put on in the fall or in the spring. Possible exceptions to this would be in areas where a lack of adequate snow cover might allow blowing off of fertilizer from the ground.

Q—If results from fall and spring fertilization are the same, why put fertilizer on in the fall?

A— Spring is the busiest time of year for every farmer. It is, therefore, much to his advantage to have his fertilizer in the soil when this busy time arrives. Also, dealers will usually give a discount in the fall of the year to encourage this type of buying. There is also another favorable factor, and that is that you can usually get the exact kind of fertilizer you want and need in the fall of the year. In the spring, however, you may find that the supply for your correct grade is gone and you will have to settle for a less desirable one.

Q—If this is true, why is fall fertilization not practiced more widely?

A— Soil scientists have only recently made field tests along this line, and the knowledge of what fall fertilization can do has not reached every quarter as yet. There is also some inertia to overcome, and, also, a great deal of education along this line. Some 16 years were required for the idea of hybrid corn to catch on generally, so it could be expected that the idea of fall fertilization may not be accepted suddenly.

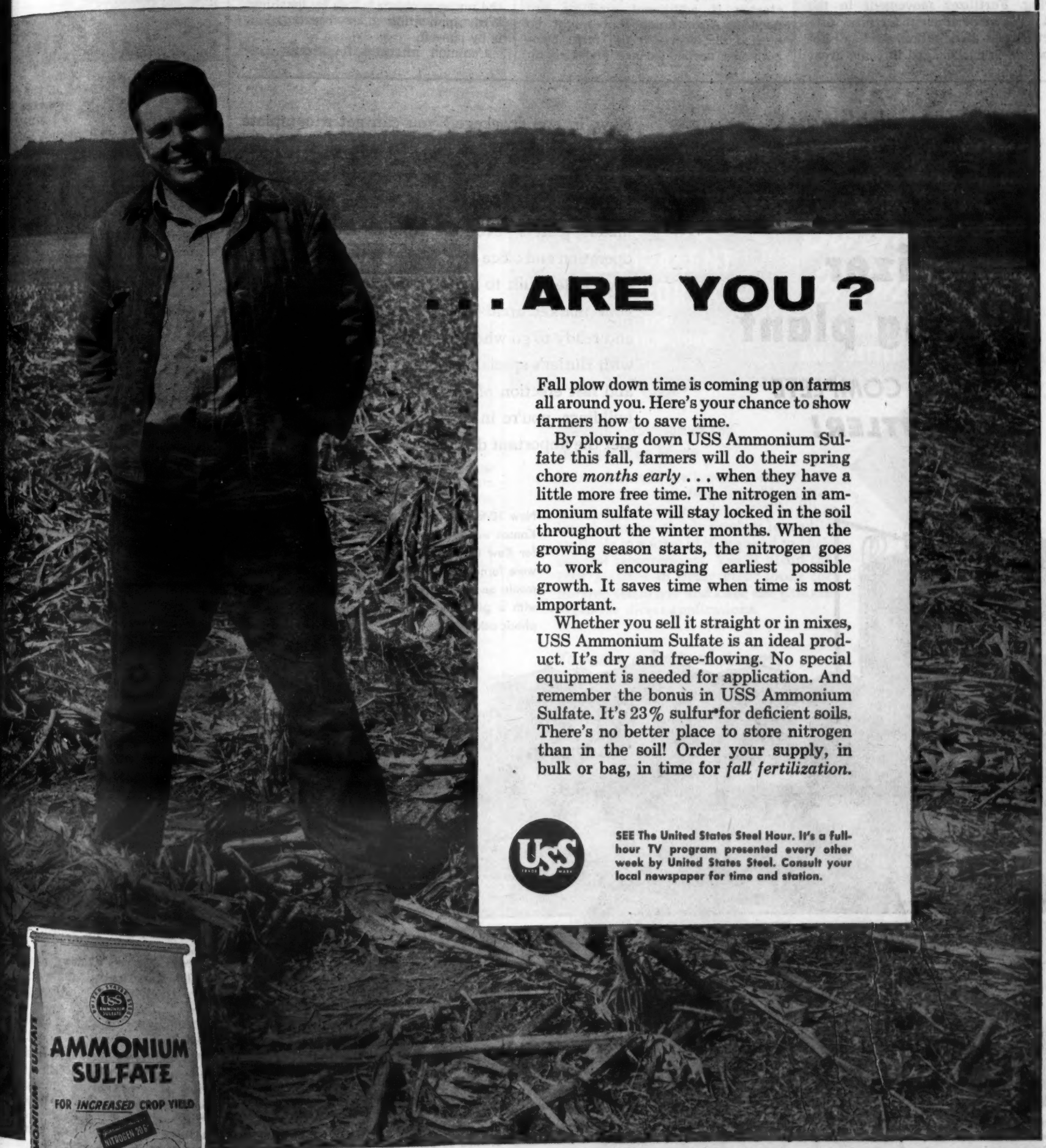
Q—Can I store fertilizer this winter and have it in good condition when I wish to use it next spring?

A— It all depends upon the facilities used in storage. Bags of fertilizer should not be piled more than six or seven high and should be kept off of the ground or concrete for best results. Naturally, the building in which the fertilizer is stored, must be weather tight to keep out rain or excessive moisture. Under these conditions, fertilizer will keep in good shape, particularly the granulated type.

Q—Is it possible to apply anhydrous ammonia or other forms of nitrogen in the fall of the year without excessive loss from leaching?

A— The answer to this question depends largely upon the matter of whether the soil becomes frozen solidly during the winter months. The anhydrous ammonia, upon being injected into the soil, changes its form to a solid which does not escape from the soil as gas. In ground that freezes solidly throughout the winter, there is no danger of losing the nitrogen thus applied.

THIS FARMER IS READY FOR FALL FERTILIZING



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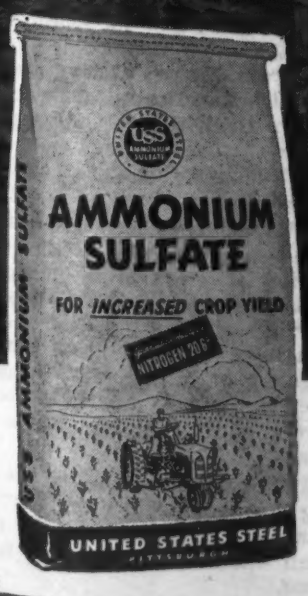

USS Ammonium Sulfate

UNITED STATES STEEL

Fertilizing in Fall Offers Many Advantages Under Iowa Conditions, Agronomists Say

Applying fertilizer in the fall is relatively new in Iowa. Many farmers like the idea of getting it out of the way before their busy spring season. Truck spreading and custom applications of liquid nitrogen materials are easier in the fall than in the wetter spring. Fertilizer movement in the fall gives more efficient fertilizer production and distribution. And fall application is encouraged in some areas by lower prices for fall delivery.

But there can be limitations in fall application. Yield increases may not be as high as from spring application. Fall applications can't always substitute for starter (hill or row) application at planting time for corn, though they can supplement the starter if additional amounts are needed. Also, funds that might be needed elsewhere in the farm business are needed sooner and tied up longer for fall application than for spring.

Soil and climatic conditions vary widely in Iowa. Thus, the relative value of fall and spring applications varies too. Because of this, it's difficult to make general over-all recommendations between fall and spring applications. Though much more research is needed, some trends are becoming evident:

Nitrogen . . .

The big problems here with fall and winter nitrogen applications are those of loss by leaching or run-off. With fall applications before freezing, the major problem is loss by leaching. With application after freezing, loss is by run-off.

Common nitrogen fertilizers contain either nitrate, ammonium ammonium-forming types of nitr or a combination of these. Tab shows the common straight nitr materials and the forms of nitr they contain. Mixed fertilizers most of their nitrogen in the monium form, though some may a considerable amount in the nit form.

Ammonium-forming nitrog changes rapidly to ammonium trogen in the soil. It's held by soil particles and doesn't leach except in sandy soils—as long as stays in this form. Under war moist, well-aerated conditio however, the ammonium nitrog is changed rapidly to nitrate trogen by soil micro-organism under cool or dry conditions, th change is quite slow.

Nitrate nitrogen leaches rea with soil water and may be lost of the root zone. This may be ra in sandy soils but is slower to mo slower in heavier-textured silt loa in silty clay loams and in soils w heavy subsoils where water mo ment is slower. The majority of Io soils are of these heavier-textu types.

It is mainly the possibility of lea ing losses that makes up the risk fall nitrogen application. Fall rainf usually isn't heavy enough to lea nitrogen out of the root zone, a there's little or no leaching when t soil is frozen. But there may be so downward movement of nitrates the fall from fall-applied nitrog and early the next spring before t usual time of spring application. so, more fall than spring nitrog may be moved out of the root zo if spring rains through June a heavy.

How much rainfall actually ge into the soil is important too. Slo ing soils, poor surface structure a heavy claypans limit the intake a downward movement of water. Th means more run-off and less mov ment through the soil than on so able to take in most of the rainfall.

Soil texture determines the wa ter-holding capacity of the soil. Ni trogen leaching is much slower i heavy soils that are able to hold 1 inches of water down to 5 feet tha in light-textured soils able to hol only 7 inches.

There's little information at pre ent on nitrogen movement in Iow soils, though additional work is progress. There's evidence that nitr gen leaching losses aren't as serio as we thought several years ago. N trogen carryover and good result from early spring-applied nitrogen i dicate this.

The evidence indicates that nitr gen leaching is none to slight over period of years in the rolling loe soils of western Iowa and in some our heavy claypan soils in southeas ern Iowa. Applications of either am monium or nitrate forms of nitroge —even in early fall—should be rel tively safe from leaching in the areas.

In sandy soils where nitrate leach ing is rapid, side-dressing nitrogen June will usually give better result than earlier spring or fall applic tions.

The source of nitrogen and whe it's applied in the fall also affe

Editor's Note

The authors of this article ar connected with the Iowa State lege department of agronomy. I Dumenil is assistant professo agronomy; H. R. Meldrum and Pesek are associate professor agronomy.

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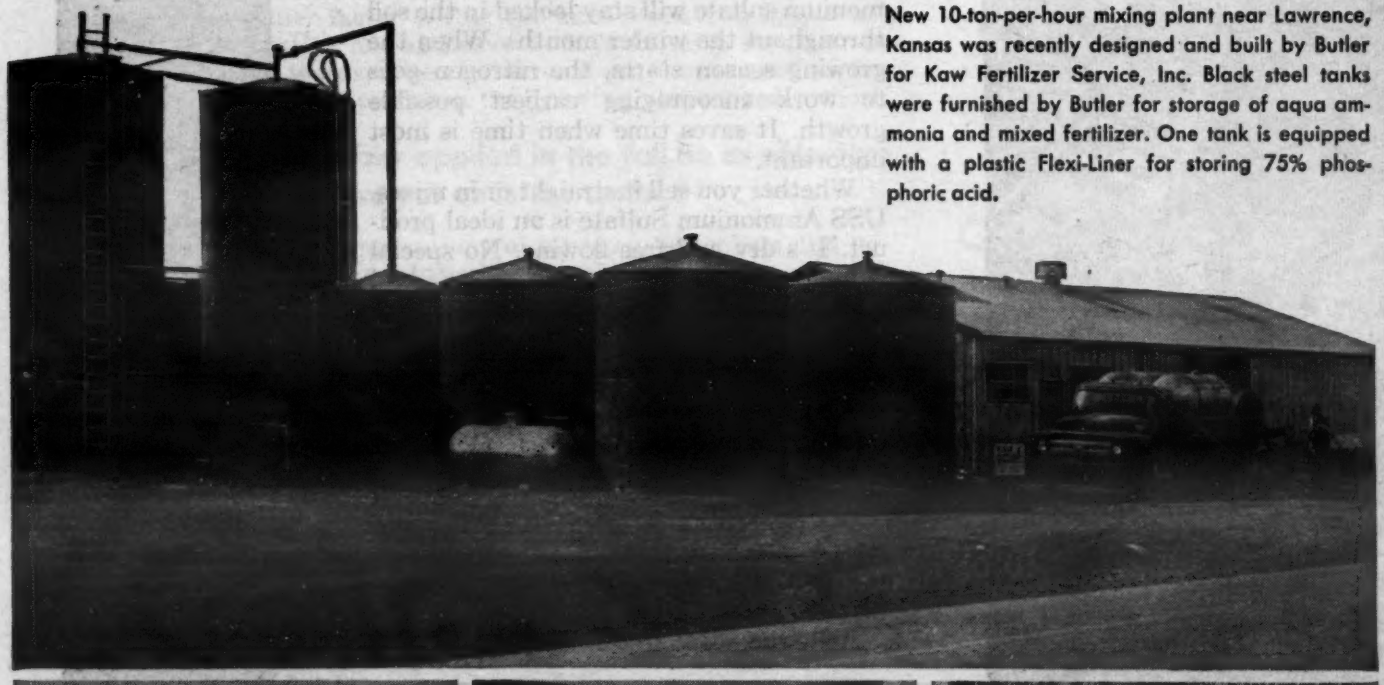

New 10-ton-per-hour mixing plant near Lawrence, Kansas was recently designed and built by Butler for Kaw Fertilizer Service, Inc. Black steel tanks were furnished by Butler for storage of aqua ammonia and mixed fertilizer. One tank is equipped with a plastic Flexi-Liner for storing 75% phosphoric acid.

Butler metal building provides permanent, economical shelter for mixers, controls, and field application equipment at Kaw Fertilizer Service.

Anhydrous ammonia is converted into aqua ammonia from tank cars and transports with this Butler-designed converter and heat exchanger.

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Lloyd Dumenil

ching losses. Nitrate forms are ject to leaching immediately. Am- nium or ammonium-forming types st first be changed to nitrate be- e leaching can occur, though am- nium nitrogen can be changed to rate in 2 or 3 weeks under warm, ist conditions.

Soil moisture conditions in the fall l influence the safe time to apply rogen. If the soil is extremely dry early fall, nitrification will be slow, l fall and spring rainfall would ve to be much above normal to ch nitrogen out of root zone. Am- nium nitrogen could then be ap- ed earlier, and the nitrate forms uld be safer to use than normally.

In drouth years, and perhaps also relatively dry years in the north- estern corner of Iowa, downward ovement of nitrate from fall-ap- ied nitrogen may be advanta- ous. The fall-applied nitrogen uld be available in moist soil nger during July and August.

Soil micro-organisms in decompos- crop residues plowed under in the l may tie up some of the fall-ap- d nitrogen and thus prevent leach- . But we don't yet know how im- tant this is in preventing nitrate ses. There's evidence that micro- anisms prefer ammonium to ni- te nitrogen, so they may use the monium nitrogen first in decom- sing the residues and not tie up all the nitrates present. And less ni- gen may be tied up if the nitrogen l residues aren't incorporated to- her. Also, cooling soil tempera- es in the fall slow down the ac- ities of the micro-organisms.

Tests in 1952 and 1953 (see table showed litle difference between **fall (early October) and spring (late April) applications of ammonium nitrate. The average advantage of fall-applied nitrogen in 1953 came from two tests on heavy-textured soils in northwest Iowa and may reflect some of the advantage of fall plow-under phosphate since both nitrogen and phosphate were applied together. Or, the fall nitrogen may have been deeper and more available during the late-summer drouth.**

These tests indicate only that fall application is as good as spring application in some years. Remember that rainfall from the fall of 1951 to the fall of 1953 was normal or below normal. Fall and spring applications should give similar increases on the 1954 corn crop since there was little movement of fall nitrogen up to the normal time for spring applications.

Phosphate, Potash . . .

Field experiments in some other states and greenhouse experiments both in Iowa and elsewhere have shown generally that phosphate and potash applications several months before planting are not as efficient as applications at planting time. The efficiency loss is due to fixation of these nutrients in the soil; they're changed to a less available form. However, soils do vary in phosphorus and potassium fixation. While important on some soils, it doesn't seem to be a great problem on many Iowa soils.

Results from our recent tests with corn in fall-plowing areas show that fall plowing-under of superphosphate often is superior to spring disking in. Average increases of fall and spring superphosphate applications in 1952 and 1953 are shown in table 3. All of these soils were very low to low in available phosphorus.

The advantage of the fall plow-under over the spring disk-in phosphate was consistent in all 1952 tests —ranging from 4 to 12 bu. an acre. In 1953 the difference of fall over spring ranged from –1.3 to 7.6 bu.

Notice that different methods of application are also involved. But these are the practical times and methods for fall-plowing areas. Since few farmers have deep-placement equipment for spring application, they can either (1) get deep placement by fall plow-under or (2) settle for shallow placement by broadcasting in the fall after plowing or in the spring. In two tests on gently sloping fields, broadcasting phosphate in the fall after plowing wasn't as good as plowing under but was as good as spring application.

Most of the advantage of the fall plow-under phosphate is due to its deeper placement. Phosphate moves

TABLE 1. Form of Nitrogen in Nitrogen Fertilizers

Source	Percent nitrogen	Ammonium	Nitrate	Ammonium-forming
ydrous ammonia	82	100	..	..
monium sulfate	21	100	..	..
monium nitrate	33.5	50	50	..
ea	45	..	..	100
ution 32	32	25	25	50
rogen solutions (slight pressure)	37 to 41	68 to 76	24 to 32	..

TABLE 2. Average Responses of Fall "Plow-Under" and Spring "Disk-In" Nitrogen on Corn*

nds of nitrogen N) per acre	Year	Number of comparisons	—Yield increases (bu./A.) from— Fall plow-under	Spring disk-in
40	1952	4	10.9	11.4
40	1953	4	18.7	14.4
80	1953	4	22.4	20.0

*Fall significantly better than spring application in one experiment in 1953. Differences on er individual experiments not significant.

TABLE 3. Average Responses of Fall "Plow-Under" and Spring "Disk-In" Phosphate and Potash on Corn*

utrient nd rate	Year	Number of comparisons	—Yield increases (bu./A.) from— Fall plow-under	Spring disk-in
lbs. P_2O_5	1952	7	17.5	10.0
lbs. P_2O_5	1952	7	17.5	13.5
lbs. P_2O_5	1953	2	10.2	7.2
lbs. P_2O_5	1953	4	29.2	24.6
lbs. K_2O	1952	2	38.4	35.2
lbs. K_2O	1952	2	46.9	42.3

*Fall significantly better than spring phosphate in two experiments in 1952 and three experi- nts in 1953. Differences on others not significant. Fall significantly better than spring potash one field—no significant difference on the other.

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very little with water. So plow-under phosphate is in moist soil while disk-in phosphate often lies in dry surface soil in July and August when needs are high. The advantage of deeper placement is greater in drier seasons and areas. Plowing under also gives some banding effect which may result in less phosphate fixation than disking in.

We compared fall plow-under and spring disk-in potash on two potash-deficient fields in 1952 (see table 3). The soil types were Carrington and Floyd in northeastern Iowa. The differences between times and methods of application were similar on both fields. On one of these fields, all broadcasting after plowing gave a lower response than plowing under but still as good as spring disking in.

Broadcast applications of phosphate and potash are most profitable on the most deficient soils. On soils of slight to medium deficiency, starter (hill or row) fertilizer at planting time usually takes care of the phosphorus and potash needs of corn. Additional starter fertilizer is profitable on many soils where broadcast applications of phosphate and potash have been made, though it sometimes isn't profitable on some soils where medium to high broadcast rates have been used.

If you plow in the fall and plan to broadcast phosphate or potash for corn, plowing it under in the fall may be more profitable than broadcasting in the fall after plowing or broadcasting the next spring. If the broadcast fertilizer contains nitrogen, consider the risks of fall-applied nitrogen. Since most or all of the nitrogen in mixed fertilizer may be in the ammonium form, late fall plow-under should be satisfactory. But if the plowing is done in September or early October, the risk of nitrogen leaching is greater.

On fall-plowed land, on land spring-plowed for corn and on going to oats, fertilizer is spread in the fall and winter. what we've learned from our won't help much here; our ferti was plowed under in all but two Surface spreading in the fall winter may result in an additi nutrient loss in surface run-off w and soil erosion. Risks vary w because of varying rainfall, run slope of land and time of applica Since so many factors are invol the risks over a period of years hard to evaluate.

As far as losses by run-off erosion are concerned, fall appli tion should be satisfactory on le to nearly level land, on gen sloping contoured land, on slop sod land with enough vegetation decrease run-off and on fall-plow land, not too steep. On sloping la surface run-off and soil eros from rains or rapid snow melting late winter or early spring bef the frost goes out could cause se ous fertilizer loss in some years.

Spreading on frozen ground or top of snow in winter is riskier t spreading in the fall. Fall rains fore freeze-up can move the fall- plied nutrients, particularly nitrog into the soil. This results in less from run-off. Risk of loss on f spread fields such as cornstalk soybean stubble land can be creased by disking in the fertilizer

Many farmers are applying fe lizer for small grain with a grain d at planting time. Drilling fertili with the small grain usually gi better results than broadcasting. F application shouldn't be used as substitute for this desirable practi

If legumes aren't fertilized a quately at seeding time, they can top-dressed with phosphate or pota in the summer after the small gr

(Continued on page 21)

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Good Results Reported for Fall and Winter Fertilizer Application in Kansas

Editor's Note

The author of this statement on ll fertilization in Kansas, is Dr. V. Olson, head of the department agronomy at Kansas State College, anhattan.

In the southern portion of the rth central area of the United ates, it is common for fall-planted ops to occupy half or more of the anted acreage. In Kansas in 1955, example, about 12,200,000 acres crop land were occupied by fall-wn crops (wheat and alfalfa) hereas about 10,400,000 acres were spring-sown crops.

Since this is the case, one would pect large quantities of fertilizers be used during the fall season. This particularly true in the case of osphatic fertilizers since more effi-nt use of fertilizer phosphorus is dinarily expected when it is incor-rated in the soil with the seed than hen it is broadcast on the surface er the crop is established.

The above reasoning is substanti-d by fertilizer sales statistics. Dur-g the period 1952 to 1955 in Kan-s an average of 134,712 tons of tilizer were sold in the fall each ar and 94,502 tons were sold in the ring. In terms of fertilizer plant nu-ent sales, comparable figures for ilable phosphoric acid are 28,300 ns in the fall and 15,000 tons in spring; for nitrogen, 19,100 tons the fall and 16,000 tons in the ring.

The fact that nitrogen may suc-ssfully be topdressed on growing heat in the spring probably ac-unts for the relatively larger pro-rtion of nitrogen used during that ason. As a matter of fact, in estern areas of the state where outh hazards are great, the only rtilizer usage recommended for heat is spring top-dressing with a trogenous fertilizer in seasons hen subsoil moisture supplies are od. This practice permits nitro-n usage under conditions which ill allow for yield benefits since otential response is a function of oisture availability.

The fact that winter wheat in Kan-will respond equally well to fall, nter, or spring applications of ni-gen may be illustrated by the fol-ing data collected by Dr. F. W. Smith. These data are the average of 16 trials, each replicated three or four times.

Time and rate of application	Bu. wheat per acre
No nitrogen	23.3
50 lb. nitrogen per acre at seeding (October)	35.8
50 lb. nitrogen per acre Dec. 20	35.8
50 lb. nitrogen per acre Feb. 20	35.0
50 lb. nitrogen per acre Mar. 10	34.6
50 lb. nitrogen per acre Mar. 30	34.7

Other experiments have shown equally effiective results if half of the nitrogen is applied at seeding time and the remainder at one of the above dates.

R. V. Olson

OVER THE COUNTER

(Continued from page 8)

A page, suitable for posting on the dealer's bulletin board, is devoted to questions and answers on fall fertilization. Some of the common questions asked by farmers about fall fertilization are answered, thus easing the dealer's job of trying to overcome possible objections. The questions and answers were prepared with the assistance of a leading university agronomist who is considered an authority on fall fertilization.

Reproductions of newspaper mats, booklets, brochures and other sales aids available to dealers are also found in the section. The sales aids offered by suppliers to their dealers can be valuable tools in educating farmers to buy and apply fertilizer in the fall. Retailers ought to make wider use of these tools, and the supplier's representatives will be glad to help out.

Years of research findings on fall fertilization are reviewed by agronomists, lending authoritative sanction to the idea.

All in all, the various articles and features are designed to spread the idea that fall fertilization, where recommended, is as productive as spring fertilization, with the added advantages of relieving the spring congestion, warehousing and transportation headaches, overtime and avoiding resentment of customers who are kept waiting in the line-up.

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Shown on the opposite page is one in a series of big, full-page advertisements appearing in farm magazines. Others have preceded it and more will follow. We trust that this campaign meets with your approval and we will greatly appreciate any comments or suggestions you may wish to send us.

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farm has been in my family more than 100 —and it has been making money most of that It's making money today, with the help of a otation, deep soil that holds water, and plenty ilizer. My grandfather had a plow, an axe, a nife and a flail, a cradle and a scythe—plus ighty well calloused hands. He and my dad on their feet; I try to farm from my tractor 've got more power, more machinery, better igger fields and less hired help. Best of all, more fertilizer and I use it.

stures aren't just exercise lots for my cows. er makes the grass roots shoot up real feed. rn and wheat fields aren't just exercise lots and my plow and combine or corn picker. They grain—and profits.

ot seeding as much wheat land as I did ears ago. But a 40-acre lot with 8 tons of fer- turned out more profit in '56 than 60 acres with of fertilizer in '55. That's why I'm putting on 33 acres of wheat this fall. I used to stay the state average with 25-bushel acre yields. ummer I got 36 bushels. With good moisture inter, I figure to combine close to 1,300 bushels at next July. And I'll make some money—t piling up any surplus grain.

"I'm feeding more corn than I sell. Except for a couple of real dry years, I've boosted my per-acre yield every year for the last 10 years. The right hybrid helps—but fertilizer really does the trick. This year I'm using about $32 worth of fertilizer per acre of corn. The way it's earing out, I should get a yield well over 100 bushels. This corn won't cost me more than 60 cents a bushel in the crib.

"Yes—I farm from where I sit on my tractor. From here, I can't figure out this year's farm program, or next year's. But I know I can grow crops cheaper when I use enough fertilizer. My County Agent says fertilizer is lower priced than anything else I buy to grow a crop. He says it's so and I know it works. Fertilizer makes crops grow profits. That's what I'm interested in—acres that make me money—not acres that just keep me busy.

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Your fertilizer dealer can supply you with a good brand of fertilizer in the amounts and analyses recommended by your County Agent. Help your dealer to get your fertilizer to you on time by placing your order early and accepting prompt delivery. It pays to have your fertilizer on hand when you need it. Remember, fertilizer grows farm profits. *Make sure you use enough this year!*

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GRAPHIC RESULTS—The above photo taken on a Wisconsin farm give an impressive indication of fall vs. spring fertilizer. The strips on the le were treated with 10-10-10 in the fall, the four on the right in the spring In both cases, the amount applied was about 500 lb. an acre. Yields (ex pressed as dry matter) showed 2,787 lb. for the fall-applied fertilizer (put o October 26); 2,404 lb. for the spring-applied plant food put on April 19; an only 840 lb. for the check lot which received no fertilizer. It was also note that the fall-treated pasture was ready for grazing a few days ahead of th

Apply Fertilizers in Fall For Old Alfalfa, Pasture, And Timothy Brome Fields

Editor's Note

Prof. C. J. Chapman, author of this article, has long been an exponent of the fall application of fertilizers, particularly nitrogen. Known widely as a nitrogen "evangelist," Prof Chapman has traveled in many areas speaking on the subject. From his vantage point in the department of soils, University of Wisconsin, "Chappy" has seen the use of nitrogen develop on a scale undreamed of when he began his work at Wisconsin more than 30 years ago.

Old alfalfa fields which produced abundant crops of hay this past year have used up a lot of plant food. Why not "set the table" again this fall with a liberal topdressing of phosphate-potash fertilizer that will rejuvenate these fields and supply the plant food needed for next year's crop?

For best results in Wisconsin we recommend getting the fertilizer on by mid-September. We say apply mixtures such as 0-10-30 or 0-12-36 at rates from 300 to 500 lb. per acre. Where there has been any evidence of a boron deficiency, topdress with 0-9-27B or 0-10-30B (B stands for boron which is supplied in sfficient quantities to meet the requirements of alfalfa grown on fields deficient in this element). In fact the extra cost of the fertilizer to supply the element boron will amount to only $1.50 or so per acre and may be looked upon as insurance. (Boron deficiencies are more in evidence in seasons of prolonged dry weather.) Treatment with a fertilizer containing boron will frequently increase alfalfa seed production, even where there may not have been any apparent effect on the yields of hay. "Alfalfa yellows" due to leafhoppers working on the second crop is frequently mistaken for boron deficiency symptoms. Spraying alfalfa fields with an insecticide 10 days after the first cutting has been harvested is a positive preventive of "yellows" due to leafhopper damage.

Testing your soil for available phosphorus, potash, and boron will give a better idea of just what ratio of phosphorus and potash to use and will certainly be helpful in predetermining the need for boron. If your soil tests show a low phosphorus and as well, a low potash content, then it would be best to use a mixture such as 0-20-20. If deficient in boron, apply about 30 lb. per acre of borax in addition to the 0-20-20.

What about nitrogen for grass pastures or these old brome-alfalfa timothy fields? Wonderful results can be expected next year where 10-10-10 (Any 1-1-1 grade of fertilizer such as

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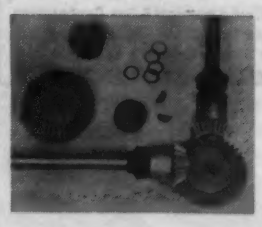

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8-8-8, 9-9-9, 12-12-12 or 13-13-13 may be substituted for 10-10-10) is applied on these pastures or old alfalfa hay fields that are running strong to brome or timothy. You can topdress late this fall or next spring. How much 10-10-10 per acre? We recommend 400 to 600 lb. per acre. You'll frequently double and even treble the production on your June grass pastures next spring or make an extra ton of hay and at the same time build up the phosphate-potash content of your soil that will carry over the following year. This residual carry-over of minerals will frequently stimulate the growth of the native clovers in these old grass pastures.

Yield data indicate that equally as good results can be obtained where 10-10-10 or 12-12-12 is applied in the fall as compared to spring applications. On the Hubert Kelter farm the results were best from the fall-applied 12-12-12. In this case the grass got off to an earlier and more vigorous start in the spring. In fact it was ready for grazing several days ahead of the spring-treated portion.

On another farm, the advantage for fall application was likewise very much in evidence in the early period of grazing. Later on, the spring-applied 12-12-12 caught up and carried its dark green color for a longer period.

The response on a different plot was a little in favor of the spring-treated area. Be that as it may, the thing we do want to emphasize is the fact that nitrogen fertilizer can be applied with good results in late fall on silt and clay loam soils in Wisconsin.

Actually there is some advantage in applying fertilizer in the fall of the year—whether it be 0-9-27(B), 0-10-30, or 0-20-20 for alfalfa or late fall application of 10-10-10 or straight nitrogen for grass meadows. First of all you get the job done when there is firm footing for the tractor-truck or spreader, and this is especially important in connection with bulk spreading by truck. Many fertilizer manufacturers and their dealers give an extra price discount as incentive for fall purchases. Where applied in the fall the available plant food is there ready to feed the grasses and clover in these pastures or old hay fields when spring rains and sunshine wake them up from their winter's slumber.

Results from some of our fall-treated alfalfa fields show some outstanding responses to treatment. Bear in mind the fact too that in most cases these increases in yield are for one or two cuttings only. If yield data had been secured, there most certainly would have been further increases and benefit from the fertilizer.

The residual carry-over benefit to the second year crop in some experiments was much greater than that shown for the first year. In fact part of these increases the second year were due to a thinning-out or winter-killing of the alfalfa on the unfertilized plot.

Straight nitrogen fertilizers can be applied in late fall to old grass pastures or timothy-brome fields on heavy soils in the Northern states, but these fields should also be given a liberal application of 0-20-20 or 0-10-30 to back up this nitrogen. Confine application of 10-10-10 or straight nitrogen to the heavier silt or clay loam soils, and delay application until mid-October or until the temperature of the soil drops below 60°.

Anhydrous ammonia knifed into the cool, moist silt and clay loam soils in late fall stores perfectly under Wisconsin conditions, and it's cheaper storage than when held in tanks. It can be cut or "knifed" into grass pastures, hay meadows, or stored in fall-plowed fields which are to be fitted for grain, corn, or other crops the following spring. Anhydrous ammonia is fixed chemically and held by the clay fraction. It's there all ready to feed your crop when these fields warm up in the spring. Cost per unit of nitrogen will be less when you buy and apply in the fall.

Remember storage is one of the problems of the anhydrous ammonia manufacturer. He is anxious to keep his plant in continuous production and often will make some price concessions to those who will take part of his "off-season" output.

All fertilizers are bulky and require a rather steady flow of raw materials from the local fertilizer factory to the dealer's warehouse or tank storage. The manufacturer, and the dealer as well, must move the finished product onto the farm as quickly as possible. In turn, the farmer will, when feasible, find the cheapest and safest storage in the soil.

In order to get the ideas and opinions of agronomists in other states pertaining to fall and spring application, a questionnaire was sent out to some 25 leading agronomists in the Northern states. These men were ten to one in favor of late fall application of nitrogen fertilizer. Many of them supplied yield data based on carefully conducted experiments which proved without question that nitrogen fertilizer could and can be applied in the fall with just as good results as when applied in the spring.

And so I say let's stop quibbling over some minor differences of opinion and inconsequential factors "for" or "against," and encourage farmers to get the job done. Let's encourage our farmers to carry out practices that make money from them and redound to their ultimate good. Let's help the fertilizer manufacturer to operate his plant at maximum efficiency, on a 12-month rather than a seasonal basis.

Yes! and there wouldn't be that "last-minute run" on the fertilizer factory if more farmers in the Northern states would buy and apply more of their fertilizer in the fall. "Store it in the Soil" is a good slogan, and what we don't "Store in the Soil" we can profitably store in the barn or granary and hold till planting season rolls around in the spring.

It Takes TWO to Fight Grain Infestation and Douglas Has Both

1. Douglas HAS THE KNOW-HOW

Grain sanitation problems? Solving them is part of the stock and trade of Douglas. Whether you need experience and know-how for your own problems of grain sanitation or for those of your farmer customers, you can rely on Douglas to help you with those problems. More than 40 years of experience has made Douglas the most responsible and qualified source for the solution of your grain sanitation problems.

WHEREVER THERE IS A GRAIN SANITATION PROBLEM THERE IS A NEED **FOR DOUGLAS!**

Douglas CHEMICAL COMPANY
620 E. 16th Ave. • North Kansas City 16, Mo.
WAREHOUSES MAINTAINED AT

2. Douglas HAS THE PRODUCTS

In addition to broad experience in the field of grain sanitation, Douglas offers you a complete line of proven grain sanitation products. Whether you are in the grain storage business or resell our products to others who are, you can always depend on these Douglas products!

DOUGLAS TETRAKOTE ®

. . . the liquid grain protectant that stops insect infestation before it starts.

DOUGLAS TETRAFUME ®

. . . the grain fumigant that gives you 4-way protection and grain conditioning.

DOUGLAS TETRAKIL ®

. . . for effective on-the-farm grain fumigation and for commercial flat storage.

DOUGLAS SPECIAL MILL SPRAY

. . . the surface and space spray that protects the surface of stored grain from insect attack.

DOUGLAS FARM BIN SPRAY

. . . the active residual spray for you and your customers to use to rid empty bins of insect infestation.

FREE Brochure

Send for copy of new brochure that tells complete story of Douglas TETRAKOTE and how it is effectively combating the problem of grain sanitation. Mail coupon today.

DOUGLAS CHEMICAL CO.
620 East 16th Avenue, North Kansas City, Missouri

- ☐ Send literature on following Douglas products:
- ☐ Send free copy of TETRAKOTE Brochure.
- ☐ Send movie reservation information.
- ☐ Have a Douglas representative call on me.

NAME_____

COMPANY_____

ADDRESS_____

TOWN_____ STATE_____

Michigan Operators Study Time Element as Related to Application of Nitrogen

Editor's Note

The author of this article is J. R. Guttay, Michigan State College, East Lansing, Mich. The paper, titled "Time Element as Related to Nitrogen Application" was originally presented at a recent meeting of the Michigan Lime and Fertilizer Conference.

The application of nitrogen fertilizer at the proper time to our common field crops has come into greater importance in recent years. This has been brought about primarily by the advent of anhydrous ammonia on the agricultural scene along with the high nitrogen mixed fertilizers with a 2-1-1 or 1-1-1 ratio such as 12-6-6 and 12-12-12. The main interest up to now in respect to time of nitrogen application has been centered on winter wheat. Commonly, winter wheat is topdressed with manure or nitrogen fertilizer in March or April, but lately the amounts of fall and winter applications have increased.

In the past few years there has been an increasing number of custom anhydrous ammonia operators in Michigan resulting in more farmers relying on their services. As custom operators have increased their operations they have realized the advantages of spreading their work load more evenly over the year, which meant more fall applications. About the same time as anhydrous ammonia became important in Michigan agriculture, the high nitrogen analysis mixed fertilizer came along and prompted the question of whether or not the nitrogen necessary for wheat and commonly topdressed after the crop is up could not be put on at planting time.

The questions regarding time of application of nitrogen for wheat have been studied in Michigan since 1952 and while some of the questions have been answered others have not, so the studies are continuing. Generally, the following conclusions can be drawn from the experiments thus far:

1. The fertilizer salts ammonium nitrate and ammonium sulfate have produced better results on wheat when applied in the spring than when applied in winter or fall with the best practice seeming to be a March application on frozen ground. By applying the dry fertilizers on frozen ground the nitrogen is ready for use early when growth starts in the spring and it eliminates the wait for the spring thaw and drying of the soil as required of later application. The later applications following the thaw are likely to be too late resulting in inefficient use, that is, the plants may have needed the nitrogen earlier and already may be deficient and retarded in growth, and also perhaps more important, late applications of nitrogen on wheat produce a decided drop in milling quality. The drop in quality is the result of an increase in protein content of the grain, and a resultant drop in test weight and carbohydrate percentage.

2. The effect of urea is similar to the two fertilizers mentioned above in that it has produced better results on wheat in early spring than in the fall but is different in that the best results have occurred in late winter, that is, in February applications.

3. Calcium cyanamid has been used similarly to the above salts, as a topdressing on wheat at various times of the year, and appears to have no special time when it is most effective, however, it has not proved as effective as a source of nitrogen

TIPS FOR NEBRASKA CROPS

Here are some tips on fall fertilization of Nebraska crops as outlined by W. E. Ringler and M. D. Weldon, University of Nebraska, Lincoln:

1. Soil is a good storehouse for nitrogen. The applied nitrogen will be held in the top soil and less lost by erosion.

2. Nitrogen fertilizers help break down crop residues. Rapid decomposition of straw stalks, etc., is essential for good seed bed preparation and also releasing plant nutrients for the growing crops. Nitrogen fertilizers result in more organic matter.

3. Nitrogen fertilizers are more easily purchased in the fall and early winter.

4. Farmers have more time in fall for fertilizer applications.

Bromegrass and other cool season grasses respond very well to nitrogen applied in fall or early spring. Fall application has resulted in higher yields for forage and seed. Rates of 90 to 120 lb. of nitrogen per acre should be applied for hay pasture but no more than 40 to 80 lb. for seed production.

GIVE YOUR PRODUCT THE ADVANTAGE OF

BENNETT
DOUBLE PROTECTION

FIRST . . . *With Bennett carefully applied "Hi-Bake" linings, scientifically selected to properly hold your individual product.*

SECOND . . . *With Bennett's pre-tested containers and superior workmanship . . . the result of over 40 years of experience in steel container manufacture.*

You add to the quality of your product when you package it in a Bennett steel container. Bennett pails and drums give your product positive protection in storage and in transit. *Every* Bennett container is pre-tested at the factory. With all their superior qualities Bennett steel containers are surprisingly low in cost.

If your product requires lined containers, Bennett engineers welcome the opportunity to consult with you as to the proper type of "Hi-Bake" lining for your specific product. Investigate Bennett's services today.

Get the Facts on Lined Containers
Write today for this informative booklet on Bennett "Hi-Bake" pails and drums.

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Chicago Telephone Interocean 6-9488
Long Distance Peotone 2791

HASCO
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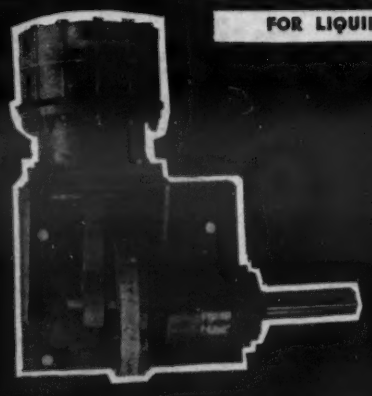
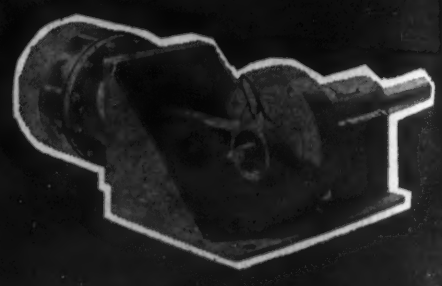
FOR LIQUID FERTILIZER



- Handles either neutral or corrosive solutions.
- Direct metering without by passes.
- No close moving part such as guided valve packings, pistons or rings to salt or stick.
- Materials used will withstand any agricultural acid mixes.

Other HASCO Items
- Ball and check orifices for Aqua.
- Filters.
- Stainless steel tanks.
- Complete broadcast applicators for non-volatile mixes.
- Other equipment by order.



HASCO CORPORATION
ELLENSBURG, WASHINGTON

or wheat as the above salts.

4. Anhydrous ammonia has produced better results when applied in the fall either as a pre-plant treatment on fitted land or as a plow-down treatment than in spring applications. October and November top dressings of anhydrous ammonia have proved nearly as successful as pre-plant treatments.

5. Generally, anhydrous ammonia and the main fertilizer salts used in Michigan, or solutions of them, have proved to be about equal as sources of nitrogen for wheat when used at the best time for the particular material in question with the single exception of calcium cyanamid which is slightly less effective as a source of nitrogen.

6. The use of 2-1-1 or 1-1-1 ratio fertilizers at planting time for winter wheat has not proved as effective as the use of a 1-4-4 ratio and a later topdressing of the nitrogen. However, this study is continuing using this year the 1-1-1 ratio fertilizers, the 1-4-4 plus topdressing, and di-ammonium phosphate which would be a 2-5-0 ratio. These three fertilizers are in comparison at equal rates of fertilizer per acre and also equal pounds of plant food per acre.

The time element has recently come into the corn fertilization picture although not as extensively as with winter wheat, but with equal importance since corn is a very responsive crop to nitrogen. The main study has been plow-down nitrogen, nitrogen at planting time and side-dressing.

The following results occurred on the experiments in corn:

1. Anhydrous ammonia was equally as effective when plowed down in the spring as when side dressed on the corn. Planting followed immediately after plowing.

2. All fertilizer salts and solutions used were equally as effective as a sidedressing whether the sidedressing was early June or July.

3. The use of 1-1-1 or 2-1-1 ratio fertilizers at planting time gave as good yields as sidedressing equivalent amounts of nitrogen. Large amounts of the 1-1-1 fertilizers are required to furnish sufficient nitrogen and accordingly the best results occurred when these fertilizers were placed in two bands, one deep and the other near the seed.. The yields resulting from conventional placement, however, were satisfactory.

In limited experiments on oats the following results occurred:

1. Plowing down of anhydrous ammonia in the spring produced a higher yield than topdressing the same material. In th eexperiments some damage occurred from the applicator teeth during the topdressing operation. Planting followed immediately after plowing.

2. The use of the 1-1-1 ratio fertilizers at planting time did not give as good results as did the plowed down anhydrous ammonia. Apparently with the conventional grain drills some damage occurs from the large amounts of fertilizer required to give sufficient nitrogen. This effect has likewise been noted on winter wheat.

3. The plowing down of urea was not as effective as topdressing the dry material after the oats were up.

In the experimental results presented so far nothing has been said about the other essential elements but it should be mentioned here that in all experiments sufficient phosphate and potash were used. Nitrogen without sufficient quantities of the other essential elements would have little effect.

Another point to mention is that the experiments with nitrogen were conducted on areas of assured need. That is, the wheat experiments were on second year wheat, the corn experiments were on second year corn or corn following small grain and the oat experiments on oats following corn. Corn or wheat following alfalfa or clover or plowed down manure would not normally need fertilizer nitrogen.

PASTURE CROPS

"We have been rather widely and strongly recommending the applications of fertilizer on leguminous hay and pasture crops during the fall. We have experimental data which show that fall is a good time to apply fertilizer for these crops."—R. L. Cook, head, soil science department, Michigan State College, East Lansing.

IOWA STATE

(Continued from page 14)

is removed, in early fall or early spring. Should the legume stay 2 or more years, top-dressing before the second hay year often is profitable.

Early fall may be better than spring application for legume top-dressing in cases of severe phosphate or potash deficiency. On one potash-deficient field in Delaware County, fall-applied potash increased red clover yields more than potash added the next spring. Nutrient-deficient legumes also are more subject to winter-killing than legumes having adequate nutrients.

In most cases, this is the problem in fall or winter fertilizer applications: You may be balancing more efficient use of your time and labor by applying fertilizer at a less busy season and perhaps at a lower fertilizer cost against a possible loss in fertilizer efficiency and the tying up of your fertilizer dollars for an addition 4 to 6 months. This balance sheet changes in the case of plow-under phosphate and potash for corn and top-dressed fertilizer for legumes under some conditions.

For the final decision, you need to consider both the economic and agronomic efficiency of fall and spring fertilization as they fit into your over-all farming operation. Additional and more specific research in different areas and upon different soils will furnish more specific guides for use in making this decision.

SALESMEN... to help boost YOUR profits!

Beat the Cost-Price Squeeze!
each $1 properly invested in
LION AMMONIUM NITRATE
will return $3 to $6 on the average corn crop
LION OIL COMPANY
Extra profits for you are
MIXED FERTILIZER

LION Advertisements Sell LION Nitrogen, *and* Your Mixed Goods, Too!

Continuous Lion advertising appears in leading farm publications, month-after-month, to pre-sell the Lion brand to farmers—and to sell the value of *your mixed fertilizers as well!*

Current advertisements are appearing in Farm and Ranch-Southern Agriculturist, Progressive Farmer, The Farmer, Nebraska Farmer, Kansas Farmer, Prairie Farmer, Wallace's Farmer & Iowa Homestead, Wisconsin Agriculturist and Farmer, Missouri Ruralist and Missouri Farmer. All of these advertisements are in color.

Each Lion advertisement promotes the economic benefits of properly using fertilizers, including Lion Ammonium Nitrate, to help increase the farmer's profits. Each advertisement sells *hard* on the importance of soil tests in the intelligent use of all commercial fertilizers. Lion, a leader in nitrogen production, leads the way to good fertilization practices . . . to better profits for you!

LION'S QUALITY LINE OF NITROGEN FERTILIZER MATERIALS

LION ANHYDROUS AMMONIA—82.2% nitrogen. Quality guaranteed.
LION AQUA AMMONIA—Ammonia content above 30%—other grades to suit your requirements.
LION AMMONIUM NITRATE FERTILIZER—Improved spherical pellets. Guaranteed 33.5% nitrogen.
LION NITROGEN FERTILIZER SOLUTIONS—Various types to suit your particular manufacturing needs.
LION SULPHATE OF AMMONIA—White, uniform, free-flowing crystals. Guaranteed 21% nitrogen.

LION OIL COMPANY
A DIVISION OF MONSANTO CHEMICAL COMPANY
EL DORADO, ARKANSAS

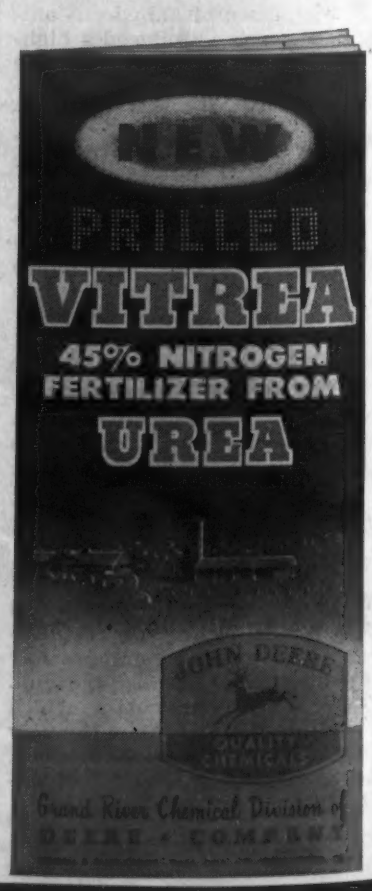
DISTRICT SALES OFFICES: Lion Oil Building, El Dorado, Ark. • Insurance Exchange Building, Des Moines, Ia. National Bank of Commerce Building, New Orleans, La. • 1401 Building, Atlanta, Ga.

Fall Fertilization Sales Helps—

New MWSIC Fall Fertilizing Folder Ready for Distribution by Industry
fertilize
THIS FALL
make money
save work
save time
New fall fertilizer folder fits easily into statement-size envelope.

HERE ARE REASONS FARMERS GIVE FOR FALL FERTILIZATION

- Fall fertilization gives better spread of work. Fertilizer put on in the fall speeds planting in the spring.
- An extra spring operation is saved when all the fertilizer needed by fall sown crops is put on at planting.
- Machinery pulls easier and does less damage with the soil in its best physical condition.
- Larger machines can be used that save time and labor.
- Broadcasting and plowing down puts the fertilizer in moist soil which increases its efficiency in a dry year.
- It's better to risk the loss of a little nitrogen than to risk not getting fertilizer on at all.
- Any slight loss of nitrogen often costs less than an extra trip over the field.
- Late summer or fall top-dressing helps hold the legume in grass-legume mixtures.
- It's easier to get the exact fertilizer ratio and grade you want.



—Order them from Your Supplier

In University of Missouri tests, wheat on left received fall application of 300 lbs. of 8-24-8 and 200 lbs. of Ammonium Nitrate. Yield: 39 bu. Wheat on right received no fertilizer. Yield: 23 bu.

Pictured here are just a few of many sales helps available to aid dealers in expanding fall sales of plant food materials. The merchandising ideas mentioned here are representative of many others available from fertilizer suppliers in all parts of the country. Dealers are urged to use the coupon on this page in addressing their suppliers for such sales helps.

Plow Down
DU PONT NuGREEN
FERTILIZER COMPOUND
for Best Results from NITROGEN
Stop Nitrogen Losses
Due to Leaching
During Cool Season
SOIL TEMPERATURE
MOISTURE (Rain or Snow)
FALL
WINTER
SPRING
SUMMER
PLOW-DOWN OF "NuGREEN" is Time Saving, Efficient; Deep Fertilizer Placement Aids Stubble Decomposition and Gives Maximum Crop Response.
FOR FULL FEEDING VALUE to the Growing Crop, Plow Down "NuGREEN" Well in Advance of Planting Time.
Per Dollar Invested
NuGREEN Pays Best
DUPONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Boost Autumn Sales With Dealer Aids Listed Below

It will simplify your asking for the bulletins, pamphlets, booklets, counter displays, newspaper mats and window cards described here, plus additional ones that other suppliers may provide.

Below are brief descriptions of the material pictured on these pages. Similar helps have been made up or are in the process of production by many firms in the trade.

Nitrogen Division, Allied Chemical & Dye Corp., 40 Rector Street, New York, offers newspaper advertising mats in both two column and three column widths, as shown in this spread. Dealers handling "Arcadian" products can make profitable use of this type of local advertising. Provision is made for the inclusion of the local dealer's name and additional copy may be presented with these mats.

Grand River Chemical Div., Deere & Company, 2010 S. Utica, Tulsa 4, Okla., offers a handy "Nitrogen Calculator" which figures instantly, pounds per acre and acres per ton, of different types of nitrogen fertilizers. Complicated arithmetic is by-passed, so that a person may turn the disc to the number of pounds actual nitrogen to be applied per acre, and he is told how many pounds per acre that will be for 16% N; 21% N; 33% N; and 45% product. It also tells the number of acres that can be treated per ton of each type of nitrogen plant food. The disc is 3⅞" in diameter.

Deere also offers a descriptive folder on its "Vitrea" brand nitrogen product. This folder can be mailed in business envelopes with statements and invoices, or distributed from office or retail store.

Olin Mathieson Chemical Corp., Medical Arts Building, Little Rock, Ark., has a good selection of newspaper advertising mats to offer to its dealers. Emphasizing the importance of "Fall Plow-Down", the advertising mats describe the value of high analysis "Ammo-Phos" pelletized fertilizer. Ample provision is made for the dealer to insert his own name for local identification. Proofs of mats shown here are two column width, but could be incorporated in larger-sized ads.

Olin Mathieson has also prepared some punchy radio scripts for use on local stations, selling farmers on the good sense of fall fertilization. These scripts include spot announcement types, and regular sales-type announcements. These materials are available only to Mathieson dealers.

Middle West Soil Improvement Committee, 228 N. LaSalle St., Chicago 1, Ill., has made up some interesting folders. Although not a "supplier" in the usual sense, the MWSIC, in representing a large portion of the fertilizer industry in the middlewestern states, has issued a 16-page brochure which opens out to size approximately 11x13". Entitled "Fertilize This Fall . . . make money, save work, same time," the folder carries statements by prominent agronomists on the subject of fall fertilization and presents nine potent reasons that farmers give in favor of fall fertilization. This portion of the folder, along with the cover, is reproduced on page 22.

To MWSIC members, the cost is $13 per thousand; for non-members, $18 per thousand.

E. I. duPont de Nemours & Co., Inc., Polychemicals Department, Wilmington 98, Del., has available for its dealers, advertising broadsides suitable for retail store display or for mailing to local customers. The "Plow Down" sheet, pictured here, comes in two sizes: 8½x11" and a "jumbo" size, 17x22". Colors used in the attractive display are orange, green and black, with other in-between shades produced by over-printing. Booklets on the subject of fall plowdown and fall fertilization are also available from the company.

Spencer Chemical Co., Dwight Building, Kansas City, Mo., has produced a number of sales helps for its dealers to increase fall tonnages. Pictured here is a 16-page booklet, size 4x7", entitled "Fertilize This Fall." An effective sales tool, the booklet answers many questions concerning fall fertilization, such as "What can you gain with fall application?", "What are the limits of fall application?" and "Can Fall application fit your needs?"

The answer to the latter question is presented in the form of U.S. maps showing areas where optimum results may be expected from this type of application on various crops. Comparisons are made on subsequent pages, between spring and fall-applied fertilizers.

A large "poster," picturing the results of fall versus spring fertilization has just been prepared by Spencer and will be available to its dealers. Shown at the left, it tells in graphic form the results of tests made on Missouri plots.

Agricultural Ammonia Institute, Claridge Hotel, Memphis, Tenn., has prepared a number of sales aids in the form of newspaper mats, 3-color display banners (15x36 in.), roadside billboard posters (24 sheet), and radio scripts. The institute offers these items for sale, as follows: newspaper mats, $1 each (single or double column); 3-color, 24-sheet posters, $12; 4-color, $15. The display banner is $1.

MAIL THIS COUPON TO YOUR SUPPLIER

Name of supplier

Please send me sales helps on the subject of fall fertilization. I am particularly interested in the types of helps checked below:

NEWSPAPER MATS ☐ DESCRIPTIVE FOLDERS ☐ BULLETIN DISPLAYS ☐
COUNTER DISPLAYS ☐ RADIO SCRIPTS ☐ OTHER KINDS ☐

Name of Firm

Address

City Zone State

Signature

IOWA DEALER

(Continued from page 8)

he may overlook in the busy spring seasons.

Then, too, there is the matter of fertilizer discounts, which are larger in fall than in spring. And, as Mr. Bauer points out to many customers, they can get the exact analysis they need in the fall — something which may not be true during the busy spring rush season.

One of the firm's ads, published in co-operation with other farm co-operative dealers in the region, stated "Our spreader trucks are ready to serve you. Save time.. save money. Why not let us apply 18 or 20% superphosphate while your fields are dry?

"Let us test your soil and make recommendations.

"1. Top dress clover fields after oats harvest (it pays and pays well).

"2. Top-dress your old stand of legumes (improve yield and quality).

"3. Plowdown these numbers for the corn crop next year. Checks show increases in corn yields. 18% normal superphosphate, 20% superphosphate, 10-10-10 and 10-20-0.

"Let us do the dirty work . . ."

Mr. Bauer reports the firm has 5 trucks for spreading at the present time, and that the company does fertilizer business within a 50 mile radius. Most of the farmers in this area are using around 300 lb. of fertilizer an acre, while others are using 400 to 500 lb. This increase per acre is the result of establishing test plots, estimating yields and educational work on the part of dealers, he says.

For example, one customer who has a 180-acre farm and who uses up to 400 lb. an acre, bought 35 tons of fertilizer from the Lake Fertilizer Co. last year. Some farmers spend from $1,000 to $3,500 for fertilizer in the area. Most of the single orders for fertilizer at the firm run from 5 tons and up.

Lake Fertilizer Co. sells approximately 5,500 tons of fertilizer annually, and by October, 1955, had 60 orders ahead for delivery and bulk spreading. Farmers were calling every day and asking for hurry-action in getting fertilizer on t land.

"It didn't used to be like this wh we first started in business," grinn Mr. Bauer, "but it is now. Farme are really taking hold on the f fertilizer deal in this part of Iow despite a dry year and lower far prices. They are investing now f future production."

The company also tests soils f farmers and works hard to get sam ples in well ahead of the spreadi season.

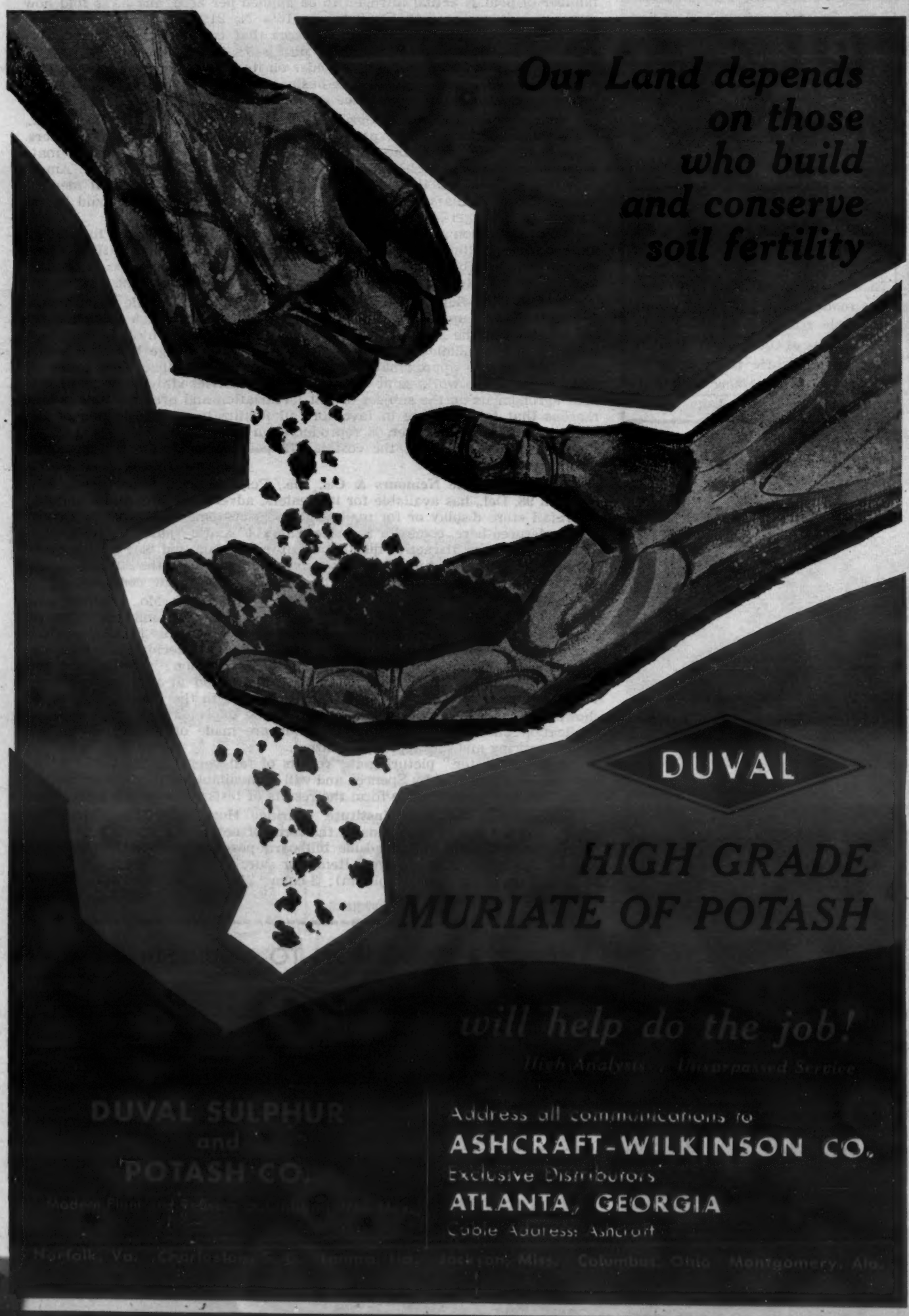
Bagged fertilizer is stored in th firm's new 70 by 160 ft. warehous built last year. All stock is on palle and two fork lift trucks are used t handle materials from railroad ca into the warehouse. The lifts a also used to take the bagged ma terial on pallets to the trucks for d livery. Mr. Bauer reports that th pallet storage system and fork lif truck method are saving the firm great deal on labor costs, and als facilitate service, especially durin rush periods.

The Lake Fertilizer Co. orde blank is quite complete. It not onl calls for the name of dealer an customer, but asks for the county township, section of the farm loca tion. At the bottom of the orde blank there also appears this para graph:

"Lake Fertilizer Co. gives no war ranty, expressed or implied, as t the productiveness of any fertilize we sell, and we will not in any way be responsible for the results from their use, or the effect thereon upon the crops."

During the winter season, the Lake Fertilizer Co., has meetings with dealers and customers in the area. At such times films and slides on fertilizer application and results are shown and talks given. Mr. Bauer reports that there is so much to be told to farmers about new fertilizers that these meetings are constantly becoming more important.

In addition to a newspaper and a direct mail advertising program, this firm also has two salesmen who visit customers and dealers in the region. These salesmen from their field experience are able to gather a great deal of information from farmers on the results of fertilizer application. They are also able to urge the farmer to have his soil tested through Lake Fertilizer Co. well in advance of the next season. This sort of steady promotion work pays off well for the company in better informed customers, which in turn means the use of more fertilizer of the right analysis for many farms.


Our Land depends on those who build and conserve soil fertility
DUVAL
HIGH GRADE MURIATE OF POTASH
will help do the job!
High Analysis • Unsurpassed Service
DUVAL SULPHUR and POTASH CO.
Address all communications to
ASHCRAFT-WILKINSON CO.
Exclusive Distributors
ATLANTA, GEORGIA
Cable Address: Ashcraft

Topdressing Alfalfa Pays Off in Wisconsin

MADISON, WIS.—Two Wisconsin soils specialists report that top-dressing alfalfa fields each year can pay off in extra tons of hay per acre.

A. R. Roberts and A. M. Strommen of the University of Wisconsin staff, say that hay yields averaged four tons per year for the past six years on fields top-dressed annually with 300 lb. of fertilizer. The tests were made at the Spooner Branch agricultural experiment station. The soils men report that unfertilized fields have yielded less than three tons of hay. Extra hay from the fertilized fields the first year was sufficient to pay for the plant food the second year. These results have continued year after year.

Mr. Roberts and Mr. Strommen say that enough nutrients remain in the soil for an extra two or three tons of hay with no added investment.

ssissippi Firm ves Push to ll Fertilization

e Lauderdale Farm Cooperative, dian, Miss., does 65% of its fer- r volume in the spring, and 35% the fall, reports T. Hamus hens, manager. Several years the percentage of fertilizer d in the fall would have been n lower, states Mr. Stephens, and redits his company's educational paign on fertilizer for being ely responsible for the swing ard fall fertilization.

We find that the average farmer busy in spring that the buying spreading of fertilizer at that is often a costly proposition to from a time and labor stand- t," reports Mr. Stephens. "There many instances when certain land can be fertilized in the fall when fertilizer can also be pur- sed more cheaply.

Also, fertilizer spread in the fall uickly available to plants, espe- ly grains and pastures, for that touch of spring sun, no matter wet the ground may be. And so farmer gets a jump on the spring wing season when he has fertilized the fall."

Many farmers in this area who ve started to do fall fertilizing some of their crops, have seen cellent results come from it, and ey tell their neighbors.

he Lauderdale Farm Cooperative been in business for about 12 rs. The average farm in this area between 80 and 120 acres, says Stephens. In addition to selling farmers, the store has a sizable ronage from gardeners. Many fer- zer sales are in one to five bag ntities.

Mr. Stephens says that his organi- ion has been active for many rs in trying to get farmers to ersify their crops to meet chang- conditions.

auffer Quadruples pam Facilities New York Plant

NEW YORK — Stauffer Chemical has completed an expansion to of the units of its Chauncey, ., plants which quadruples produc- n capacity for sodium n-methyl hiocarbamate. The chemical— ich is the essential ingredient in pam, the soil sterilant developed Stauffer chemists and agronomists shipped in bulk from Chauncey the distributing plants operated the company's agricultural chemi- s division in the East.

The Chauncey expansion was ne- sitated, according to Dan J. Keat- , general manager of Stauffer's ricultural chemicals division, by increased field demand for Vapam the eastern part of the United tes. Stauffer's distribution centers Bayonne, N.J., Tampa, Fla., Hous- , Texas and Omaha, Nebraska, k this soil fumigant for eastern wers.

Stauffer's western division has nufactured Vapam at Richmond, ., for over a year. Distributing ters for the West are located at rkeley and Vernon, Cal., and Port- d, Ore. An expansion of the Rich- nd plant was completel last fall.

GREAT PLAINS COUNCIL

FORT COLLINS, COL.—Approxi- tely 125 persons from 10 states expected to attend the Great ins Agricultural Council meeting e July 23-25, according to Colorado M College officials. The council, ich has been in existence since the uth-stricken era of the 1930's, s asked about a year ago by Ezra ft Benson, secretary of agriculture, help formulate a drouth-emergency gram for the Great Plains region.

WINTER SMALL GRAINS

"We recommend the use of 400 to 500 lb. per acre of fertilizer with winter small grains. Our tests indicate that there is no yield advantage to splitting this application on the winter small grain. By making the total application at the time of seeding the winter small grain, the necessity for making additional top dressing in the spring on the winter small grain is usually avoided except in those instances where a spring top dressing of nitrogen is desirable. Our maintenance applications of fertilizer on hold-over meadows are usually made in the summer or fall. . . . Fall is also a very good season for maintenance applications of fertilizer on permanent pastures."—G. W. Volk, chairman department of agronomy, Ohio Agricultural Experiment Station, Wooster.

WHERE FALL APPLICATION PAYS—This self-explanatory map, prepared by Dr. Firman E. Bear, retired chairman of the soils department of Rutgers University, shows areas of the U.S. where fall and winter application of nitrogen is safe, questionable and never used.

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The New Bemis Packer-Ette!

Here is a lightweight, portable, automatic performer that will handle any product that establishes an angle of repose. Typical examples: rice, sugar, corn, cracker meal, poultry feeds, granite grits, salt and dry chemicals.

Bemis Packer-Ette will reduce your costs through accuracy, speed and efficiency. It is just the packer for you in any operation that does not justify a heavy-duty, permanent installation.

Packer-Ette gives you so many benefits and features that it is impossible to do more than hit the high spots here. You'll want to get all the facts. Ask your Bemis Man . . . or write us for folder and details.

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SPEED—Up to eight 100-lb. bags per minute, depending on flow characteristics of your product.

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TAKES LIMITED SPACE—Width, 26″; depth, 42″; maximum over-all height, 97⅝″; minimum, 76″.

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WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Details of the plans as they affect the agricultural chemical industry for the sixth five-year plan from 1956 to 1960 have been revealed by officials of the USSR.

Production of concentrated phosphatic fertilizers must reach a total of one million tons within the period, it is ordered. This means a large increase in apatite concentrates, phosphorites and sulfuric acid. Total mineral fertilizers must reach 19.6 million tons by 1960, an increase of 204% over 1955. The information released in the journal Khim. Promyshl says that of this total, 17.2 million tons must come from factories under the control of the minister of chemical industry. It is not made clear where the balance is to be obtained, but it is possible that some supplies may be imported from countries with which the Russians have trade agreements.

The same journal devotes some attention to the potential reserves of DDT. Existing methods of manufacturing DDT and other chemicals are examined with a view to upping the output. Although during the previous five-year plan (1951-55) the output of DDT was multiplied 9.7 times and that of hexachlorane 7.5 times, a substantial further increase is demanded with the suggestion that the present offtake must be doubled.

A still more urgent need, S. Ya. Fainshtein, writer of the article states, is the development of new and more effective chemicals. He gives details of the consumption of various materials used per ton of DDT—370-405 lit. alcohol, 1030-1085 kg. chlorobenzol, 1½ to 2¼ tons of sulfuric acid, and about 1.2 tons of chlorine.

Greeks Invite Bids

The Greek government has announced a decision to invite international bids for the construction of a $25 million nitrogenous fertilizer plant at Ptelemais.

The plant is to have a yearly capacity of 70,000 tons of nitrogen u using only locally available raw terials, chiefly lignite mined in region. It will have to produce nually 140,000 metric tons of monium sulfate, 140,000 tons of monium calcium nitrate, 6,800 of urea, and 14,500 tons of anhyd ammonia. The cost of the fertili is expected to be substantially lo than that of the products curre imported.

West German Potash

The Japanese have placed an o for 70,000 tons of potash with many. Negotiations started last between the Japanese agricult minister and the sales organiza of the German potash companies Hanover.

In the year ended April 30, 1 sales of potash by Western Germ totaled 1,615,000 tons against 1,5 000 tons in the preceding year. ports were 11% higher at 715 tons. Britain was the largest bu taking 113,300 tons, Japan follow closely with 110,000 tons.

Portugal's Production

The Portuguese ammonium sulf industry, established in 1952, duced a record amount of 80,000 t from two plants in 1955. The gove ment has now called for a total p duction from the same two facto of 140,000 tons a year. The facto have been equipped with electroli and more are to be installed in 19 More electric power is available more is to be provided to aid stepup in production.

Indian Program

A country-wide campaign to crease the consumption of fertiliz has been launched by the Ind Ministry of Food and Agricult The benefits of proper fertilizat are being explained to farm through lectures, group discussio pamphlets, radio talks and films. tual field demonstrations are be given, too.

Consumption of ammonium sulf in India has risen from 275,000 t in 1950 to about 600,000 tons in 19 an increase of 120% over a five-y period. The usage of nitrogenous f tilizers has still a long way to officials state. Special efforts are ing made to popularize the use urea. New units of production being set up and the Sindri facto is exepcted to make a start in 19 by producing 24,000 tons of urea a 100,000 tons of ammonium sulf nitrate.

The campaign is aimed at creati an adequate demand for these n fertilizers and assure a ready mar for the new production.

The target of consumption nitrogenous fertilizers has been s at 370,000 tons of nitrogen, or a proximately 1,850,000 tons in term of sulfate of ammonia.

Against an estimated demand 600,000 tons of sulfate of ammon during this year, internal producti is expected to provide 404,000 to with Sindri supplying 230,000 to The government has arranged f the importation of 200,000 tons a shipments have already started come in.

Urea and ammonium sulfate being imported in limited quantiti with development assistance ava able from the Indo-U.S. Technic Cooperation Administration progra During 1956-57 it is proposed to i port about 23,175 tons of urea a 15,500 tons of ammonium sulfate trate.

British Pool

The British Pest Infestation Bo has formed a pool of entomologi and chemists who will be availa to go to the colonial territories work on specific problems relat to stored products. They will be tached to the Pest Infestation L oratory at Slough in England.

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You'll like the on-time delivery of UAL. There are four formulations available. For technical assistance and information on the formulation best suited to your use, write Du Pont.

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CANADIAN MEETING

(Continued from page 1)

the U.S., emphasized that while sumption of actual plant food year is no higher than last r, the fertilizer industry hopes at least maintain and perhaps rease the use of plant food in U.S. for the coming year.

A. Taylor of the Steel Company Canada, retiring chairman of the t Food Producers of Eastern ada, reviewed the progress made ng the last year by the group welcomed the new incoming ex- tive.

S. L. Pope, president of the In- ational Fertilizers, Quebec, is chairman.

he purchase of commercial ferti- rs should be regarded as an in- ment in which all the factors in- ed must be studied as carefully when investing in bonds, stocks real estate, stated Dr. R. P. nington, manager for Canada, erican Potash Institute, Burling- Ontario, told the convention.

Fertilizers should be purchased recommended in such a way," inued Dr. Pennington, "that their will give the greatest possible re- from the investment, rather being purchased so as to cut the of fertilizers to a minimum. This should be impressed upon farm- agricultural research and exten- personnel and bankers. When is accomplished, the use of com- cial fertilizers will be increased he benefit of both the farmer and general public."

Dr. Pennington emphasized that tilizers used in this way may not rease the total production of any p. It will mean however, that ps will be produced at the low- per-unit cost, and the farmer abled to make a reasonable fit.

uch use of fertilizers, he pointed will in most cases enable the mer to decrease the number of es he has in any one crop, without reasing his total production. This give him the opportunity to di- sify his operation without increas- his capital investment in land. In er to do this job, fertilizers must used properly along with other tors involved in crop production.

More attention is needed to supply- all the mineral elements required crops. It was emphasized by Dr. man E. Bear of Rutgers Uinver- , who spoke on the subject of eeting the Mineral Needs of nts."

The value of lime in the soil," Dr. r pointed out, "is not confined to recting soil acidity, but also to pply calcium and magnesium." erliming, however, he stated, tends cause a deficiency of trace ele- nts, the exception being molybde- n, which is supplied more chiefly molybdate than by extra liming.

Soil exchange values should be de up of about 20% hydrogen H 6.5), 65% calcium, 10% mag- ium and 5% potassium," continued Bear. Alfalfa, he pointed out, on n soil will contain around 165 me. l cations per 100 grams dry ght. Of these, 90 will be calcium, magnesium and 40 potassium. If assium is higher, magnesium may deficient. If lower, stand will not sist, he said.

For dependably high yields," said Bear, "crops must be able to ac- mulate about 150 lb. of nitrogen, lb. of phosphoric acid, and 150 of potassium. Because of high fix- power of soil for phosphoric acid, t value must be multiplied by ut 3. This calls for 15 tons phos- ted manure or 1,500 lb. 10-10-10 acre."

r. H. G. Dion, dean of agricul- , McGill University, MacDonald ege, Quebec, told the group that present in Eastern Canada farm- yard manure and commercial fertilizers are generally applied only to cereal crops. Grasslands usually get little or none of the plant nutrients that the farmer applies, except that used in seeding down new stands. As a result, our production per acre of grass, on which our mixed farming economy is built, is much too low, and not as profitable as it should be.

"However, if farmyard manure is applied to hay and pasture fields instead, it will make a much larger profit for the farmer than when it is used on cereal crops, since farmyard manure apparently has a much greater effect on yields of grass than it does on cereals."

Dr. Dion said that using farmyard manure on the grasslands would give longer lasting, more highly productive pastures than is general now, and would, in fact, give forage crops the property of greatly improving soil fertility for the following cereal crops—a property that forage crops should have, but rarely do, in Eastern Canada today.

"The tired sods that are plowed when they are no longer productive contribute little to the fertility of the farm," said Dr. Dion.

"Such a change in farm practice would mean, in addition to more and better forage per acre, nearly weed-free corn and oat crops, with less lodging and delayed maturity. It would be accomplished through the use on cereal crops of commercial fertilizers at considerably higher levels of application than are the rule today, when cereals get most of their needs from farmyard manure, while grassland gets little or nothing."

Speaking on the subject of the Grass Cycle, its Agronomic and Economic Significance, J. M. Appleton, president, Greenmelk Co., Wallaceburg, Ontario, emphasized the important role of grass in modern farming.

"In most agricultural soils, the destruction of soil is a serious problem," he said, "but it can be significantly controlled by the use of grass, efficiently managed and adequately fertilized." The speaker added that grass, itself, was a profitable cash crop as well.

"Grasses sown alone, adequately fertilized and irrigated, offer great potentials to the well-organized intensive farm system," he said. "And they can be easily supplemented with legumes.

"Modern mechanization makes possible the best use of grass through an intensive livestock feeding program. With modern self-feeding, silos and hay bunks, one man can look after 500 steers. And the electric fence, mower and irrigation unit help to make 1,000 pounds of beef per acre a possibility. Grass contributes to the soil structure as well as providing a profitable cash crop . . . indeed, agronomically and economically, it forms the basis of a complete farm cycle."

HOW UNION BAG BUILDS MORE BUSINESS FOR THE FERTILIZER INDUSTRY

"For 10 years I've bought fertilizer only in Multiwalls"

Raymond Rossback, farmer, Davidsonville, Maryland.

"See how correct fertilizing pays off?" says Mr. Rossback. "This is Southern Maryland cigarette tobacco, Type 32, of fine texture and quality. I fertilize heavily to grow it, from 1,000 to 1,500 lbs. per acre. I use 80-lb. Multiwalls, hand-pouring the fertilizer into the spreader machine, then out to the fields. That's the easiest and most practical way to do the job."

Union Bag information program promotes fertilizer

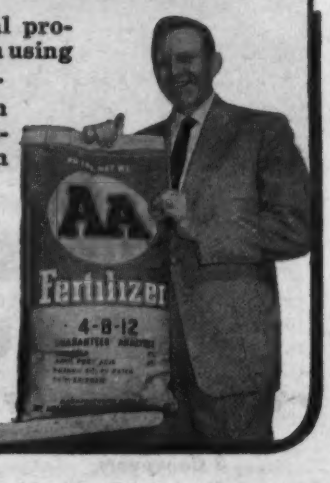
Mr. Rossback took over his property in 1911, when it was practically a wilderness. Neighbors said, "You won't last long." They were wrong; good management and the proper use of fertilizer, plus hard work, won out. To help farmers like Mr. Rossback, Union Bag stresses those themes in a countrywide educational program.

Union's information program helps build sound and expanding farm markets for fertilizer distributors. Union's Multiwalls, used by top fertilizer companies, lighten farm chores and create satisfied farm customers. The strong, attractive Multiwall pictured below was designed and made by Union for The American Agricultural Chemical Company.

"Union Bag's educational program should aid farmers in using fertilizer more efficiently. Union Multiwalls have an excellent performance record with us. We use them in quantity."

Mr. John A. Layton, Superintendent, Baltimore Plant, American Agricultural Chemical Company, Baltimore 24, Maryland.

The American Agricultural Chemical Company is one of the country's leading fertilizer manufacturers, distributing AGRICO, AA Fertilizers and 18% Normal Superphosphate.



UNION Multiwall Bags

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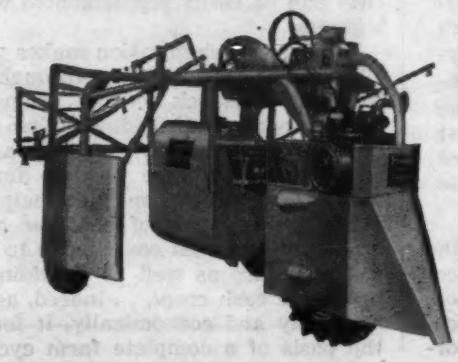
Medfly Quarantine Area Expanded in Florida Move

WASHINGTON, D.C. — The U.S. Department of Agriculture has moved to expand the quarantine area in Florida against spread of the Mediterranean Fruit Fly. Under the new provisions, effective July 13, Pinellas County will be included.

USDA says that a general infestation of the Medfly has been found along the coastal area of this county including the city of St. Petersburg. This county has previously been isolated from the main Medfly area.

COSTLY PEST

WASHINGTON—The U.S. Department of Agriculture has estimated that the spotted alfalfa aphid has cost Oklahoma growers more than $12 million thus far this year.



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● Beans ● Pasture ● All Purpose

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TILL! SPRAY! MOW! LIFT!

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FALL AND WINTER APPLICATION IN A NUTSHELL

By LLOYD DUMENIL, Iowa State College, Ames

Nitrogen (ammonium forms): Safe after soil temperature reaches 5 to 57° F. and then cools to lower temperatures. "Safe date"—second week October in northern Iowa, fourth week in southern Iowa.

Nitrogen (containing nitrate forms): Risk of nitrate leaching loss. Ge results in some years; losses may occur in others. Relatively safe in rolli loess soils of western Iowa and claypan soils of southeastern Iowa.

Phosphate: In fall plowing areas, fall plow-under for corn usually mo profitable than broadcasting after plowing either in fall or in spring.

Potash: Fall plow-under for corn satisfactory.

Mixed fertilizers: See ammonium nitrogen, phosphate, potash and su face application.

Surface applications (for corn or oats): Use caution; avoid slop where run-off losses may be high in some years. Surface fall application le risky than winter application. Disking fertilizer in after spreading on slop decreases risks.

Top-dressing legumes: Late summer or early fall satisfactory, prefe able to late fall.

Sandy soils: Avoid fall application of nitrogen, potash or mixed fe tilizers for corn and oats.

Test soils: For most profitable fertilizer use, apply according to need

See text: Other conditions affect risks. More research is needed cover wide range of conditions and to further evaluate risks.

Mid-South Farm Outlook Still Bright

MEMPHIS — The Mid-South crop picture continues to be encouraging.

The Arkansas Agricultural Extension Service reported cotton making good progress. Weeds and grass were a problem in some rice fields, but generally the rice crop prospects were good and many fields were getting a second flooding.

The small grain harvest was described as virtually completed in many counties.

Boll weevil worries continue to plague West Tennessee farmers but an efficient dusting program is keeping the situation in hand, H. T. Short, district farm agent at Jackson said.

The region's southern counties are reporting heaviest damage from insects. Squares in these fields are big enough to become prime targets for the weevil.

In most instances boll weevils are reported under control. In some cases boll worms still posed a serious threat. Cotton, corn and pastures generally are making good growth.

PURDUE FIELD DAY

LAFAYETTE, IND.—Purdue University agronomy field day will be held at Purdue agronomy farm Aug. 16.

J. R. Simplot Co. Opening New Phosphate Mine

POCATELLO, IDAHO—The J. R. Simplot Co., Fertilizer Division a Pocatello, is opening a new phosphat mine on the Idaho-Montana borde a short distance west of Yellowston Park, according to an announcemen by Ben D. McCollum, sales director

First operations will be strip-min ing the surface, though the mine wil be deepened as ore is taken out. Thi ore is light-colored and of high grade Mr. McCollum said. The company wil not get into full swing this year, a operations will probably be confine to only three or four months durin the warm season.

The shipping point will be at Mo nida, Mont., and all ore is to b shipped to the Pocatello plant. Later however, a mill may be built nearer the site of the mine, said Mr. McCollum.

$900,000 Expansion Program Announced By Dorr-Oliver, Inc.

STAMFORD, CONN.—A $900,000 expansion program has been announced by Dorr-Oliver, Inc., for its manufacturing plant at Hazleton, Pa. Greatly enlarged fabricating facilities will enable Dorr-Oliver to produce, at its own manufacturing plant, structural parts which have been subcontracted to outside firms in the past. These new facilities will, in addition, allow greater production flexibility and control, the firm said.

Erection of two new buildings totaling 30,000 square feet will bring the Hazleton plant floor space to roughly 125,000 square feet or nearly three acres.

A major portion of the new floor space will be devoted to expansion of the fabricating section and additional storeroom space, but will involve considerable rearrangement of other production departments. With construction already begun, the new facilities are expected to be in operation by the end of the year.

DOW MEETING CHANGED

MIDLAND, MICH.—The board of directors of the Dow Chemical Co. has announced that henceforth the company's annual stockholders meeting will be held in September instead of August. This year's meeting will be in Midland, Dow headquarters, Sept. 12. The board announced that the meeting date was moved ahead because, as a result of the increasing complexity of company operations, more time was required for preparation of the annual report to stockholders following the close of the fiscal year May 31.

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PACIFIC ESA

(Continued from page 1)

bmitted to set tolerances under the iller Amendment, Mr. Coyne said. l registered directions will have to reviewed to make sure they meet tablished tolerances, he said.

The need for revision of pesticide bels was also stressed by the sec- d speaker, representing FDA. Har- d W. Gerrits, chief chemist, San ancisco district, read a paper sub- itted by McKay McKinnon, Jr., ief of the district.

"We would not wish to take any tion with respect to the 1957 grow- g season that would lead manufac- rers or growers to conclude that really isn't necessary to comply ith the requirements of the Miller ll," Mr. Gerritz said. "We will need surance that pesticide labels have en revised where necessary so that e grower who follows them will get ops that are legal."

One of the most difficult problems forage, he added. Forage goes to iry animals and residues on it may into milk. Since there are no tol- ances for pesticides in milk, milk ith any residue is illegal in inter- ate commerce, he said.

"The uses of pesticides that are oing to cause trouble are those hich deviate materially from label irections," said the FDA spokesman. In the 1957 growing season growers hould take care to use pesticides on ops specified, in amounts specified nd at the time specified."

The third speaker, Allen B. Lem- on, chief of the Bureau of Chemis- y, of the California Department of griculture, said about 3% of the 00 samples of products analyzed ach month in California are found be over the tolerance level in me pesticide residue.

The final speaker, L. S. Hitchner, executive secretary of the National Agricultural Chemical Assn., said the agricultural chemical industry feels farmers can be reasonably sure of avoiding illegal residues if they follow label directions.

An improved control and a new est in southern California citrus ere described by two speakers at e meeting.

The new control — light oil with arathion or malathion for black- cale—was outlined by Arthur W. ressman, entomologist in charge of e USDA fruit insect station at hittier.

The new pest—a moth called Clep- is peritana — was reported by E. aurence Atkins, Jr., associate spe- alist in entomology, Citrus Experi- ent Station, Riverside.

Mr. Cressman reported mortalities excess of 99% in all black scale eatments of heavily infested navel range orchards at Corona. He used e gallon of a special light oil plus 15 lb. of parathion or 0.25 lb. of alathion per 100 gallons of water.

These combinations affected fruit quality less than the con- ventional sprays and had little or no tendency to accentuate water rot after winter rains, Mr. Cress- man said.

Concerning the new pest, Mr. At- ins told the entomologists that the clepis" moth has become increasing- damaging since 1950 not only in trus but also in lima beans and rawberries. It has caused economic sses to oranges in Orange, Ventura, anta Barbara, San Diego and Tulare unties and to lima beans in Ven- ra County.

"Undoubtedly clepis will be recog- zed as the insect responsible for mage of many other crops," Mr. tkins stated. "There seems to be no ractical control at present, other an raking or blowing leaves and ebris on which caterpillars feed way from the tree trunks."

What's New

Croplife's regular "What's New" feature is missing this week because of the special copy on fall fertilization. However, new products, services and literature available to readers are listed below. To secure more information write Croplife, and include in your letter the number and title of the product, service or literature in which you are interested, together with your name, your company's name and address. Address your letter to: Croplife, Reader Service Dept., Box 67, Minneapolis 1, Minn. The information you request will be sent to you at no cost or obligation.

Literature and information concerning the following products and services are available:

No. 6431—Slide set on alfalfa production, American Potash Institute, Inc.

No. 6432—Film, "How to Use Nitrogen Solutions," Nitrogen Division, Allied Chemical & Dye Corp.

No. 6433—Fertilizer plant equipment, Chemical Engineering Service, division of Manitowoc Shipbuilding, Inc.

No. 6434—Vermiculite as a fertilizer conditioner, Vermiculite Institute.

No. 6435—Section two of a booklet series on native grasses, Phillips Petroleum Co.

No. 6436—Folder entitled, "Producing Quality Corn More Efficiently with Agricultural Ammonia," Agricultural Ammonia Institute.

No. 6437—Dairy cattle and barn spray, McLaughlin Gormley King Co.

No. 6438—Turf fungicide, Upjohn Co.

No. 6439—Iron deficiency booklet, Refined Products Corp.

No. 6440—Booklet entitled, "Agricultural Ferric Sulfate," Stauffer Chemical Co.

No. 6441—Calcium arsenate spray for cotton boll weevil control, General Chemical division, Allied Chemical & Dye Corp.

No. 6442—Market program for company products, Diamond Black Leaf Co.

No. 5457—Reinforced end construction for multiwall paper shipping sacks, Bemis Bro. Bag Co.

No. 5483—Horizontal mixer for wet or dry materials, Strong-Scott Manufacturing Co.

No. 5490—Guide to time-zone and daylight saving time differences in the U.S., U.S. Industrial Chemicals Co., division of National Distillers Products Corp.

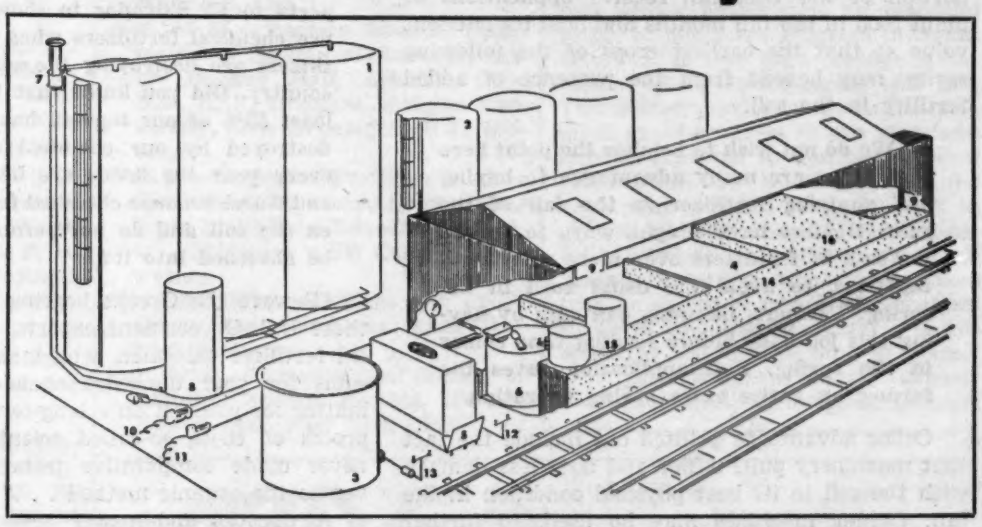
FLORIDA MEETING

MIAMI BEACH—The 13th annual convention of the Florida Fruit & Vegetable Assn. will be held at Hotel Fontainbleau here Sept. 27-29.

(Advertisement)

An Open Letter to the Industry . . .

● **On Aqua Ammonia and Neutral Liquid Fertilizers**



TYPICAL LAYOUT, F. M. NEUTRAL LIQUID FERTILIZER PLANT

1. Aqua Storage
2. Liquid Mix Storage
3. Acid Storage
4. Dry Mix Storage
5. Converter
6. Reactor Tank
7. Scrubber
8. Scrubber Tank
9. Switch Box
10. Load-Out Aqua
11. Load-Out Liquid Mix
12. Unload NH_3
13. Unload Acid
14. Unload Solid
15. Batch Tanks
16. Load-Out Dry Mix

F. M. Built 70 Plants!

Fabricated Metals, Inc., designs, produces and markets converters for aqua ammonia and plants for the manufacture of neutral liquid fertilizers. We do this to create a market for our storage, transport and application equipment.

We are pioneers in this industry. Our stabilized design of plant and equipment is the result of nine years of close collaboration with ammonia and acid producers, farm advisors, fertilizer dealers, and with the farmers themselves.

During this nine years, we have designed, built and installed over 70 separate plants, with an aggregate total capacity of more than 15 million pounds daily.

"Know How" From Experience

Many of these plants have been erected for major producers of anhydrous ammonia; some have been installed for independent fertilizer dealers. But large plant or small, from Canada to Mexico and from coast to coast across the nation, the performance of our equipment has been uniformly satisfactory and profitable to our customers; and the farmers have readily accepted the liquid fertilizers produced.

F. M. application equipment has become the standard of the industry in the West, and widely accepted in other parts of the country. No better equipment for accurate metering and placement of liquid fertilizer is available anywhere.

One of the reasons why F. M. has achieved unparallelled customer acceptance for both plant and application equipment is because, through years of experience, we have developed a "know-how" that enables us to give a complete service from anhydrous or acid tank car to the delivery of fertilizer to the crop roots.

F. M. Market Evaluation Precedes Plant Design & Construction

We have the personnel available to work with your group in producing and marketing liquid fertilizers. We are staffed to conduct realistic market evaluation of your area, as well as to carry through on the design, construction, erection, and operation of plant or application equipment.

Our service starts with an inspection of the proposed plant-site and marketing area. Following this, alternate plans for plant-layout and distribution programs are submitted. These will include a construction program scheduled to take advantage of local facilities and off-season labor forces. The construction period is utilized for the training of your operating personnel.

Financing

Our service includes financing. You can buy or lease our plant and application equipment on either of two plans. We offer a "Do-It-Yourself" package consisting of the essential plant elements, upon which there are patents pending. The converter or cooler, reactor assembly, transfer equipment, necessary valves and fittings are shipped on one truckload direct to your site—anywhere in the United States.

Our second plan, which we call our "Turnkey Job," provides all designs, engineering, construction, and installation for the manufacture of both aqua and neutral mixes. In addition, to the essential elements listed in the "Do-It-Yourself" package, the "Turnkey Job" provides storage, scrubber system (if necessary), aqua loadout station, neutral mix loadout, acid storage, site preparation, wiring, fencing and warehouse facilities. Heavy storage tanks are usually bought at the nearest point or on the lowest market.

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F. M. plants require little space (a 50′ x 50′ area is usually adequate); the conversion and manufacturing processes require little storage; the methods employed utilize liquid flow rather than pressure, therefore no expensive pressure vessels are necessary; stainless steel fittings and parts are used and a special plastic liner is substituted for a costly stainless steel vat for corrosive liquid storage. One man can operate the plant and handle the shipping. All liquids are moved by pump; solids are moved by conveyor, lift truck or loader.

F. M. Manufacturing Complete Line of Application Equipment

F. M. application equipment will spray or inject; plow-down; side-dress; top-dress; or run the neutral liquid fertilizer in with irrigation water. Our equipment allows you to select the best method of application for every situation. It fits in with accepted farming practices in your area, and extends your fertilizer selling season.

Write today, on your letterhead, for our detailed booklet entitled, "NEUTRAL LIQUID FERTILIZERS." It is available without charge.

FABRICATED METALS, Inc.

2400 Merced Street, San Leandro, California

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.

Subject This Week: Fall Application of Fertilizer

A special section of Croplife this week is dedicated to the matter of fall application of fertilizers, or, as some prefer, "off-season application" of plant foods. Although a considerable amount of data has been assembled for this issue, and the opinions of a number of agronomists in the middle western area are published, the subject is so broad that this presentation should be regarded only as a start toward finding the answers to all questions in this connection.

Not every soil type nor every section of the country is adaptable to this technique, as clearly stated in some of the material printed here. However, most of the soils found in the north central portion of the U.S. can receive applications of plant food in the fall months and hold its nutrient value so that the earliest crops of the following spring may benefit from the presence of added fertility in the soil.

We do not wish to belabor the point here that there are many advantages to buying and applying fertilizer in the fall of the year. Dealers have sought ways to spread the sale of fertilizers over more months of the year, to avoid the usual rush in the spring. Farmers, likewise, can gain by having this job done before seeding time comes in the spring. Fall application saves the farmer an entire extra spring operation.

Other advantages pointed out include the fact that machinery pulls easier and does less damage with the soil in its best physical condition in the fall. Larger machines may be used, to further reduce time and labor.

Broadcasting and plowing down puts the fertilizer in moist soil which increases its efficiency in a dry year, it is pointed out.

The spectre of losing nitrogen through leaching is the main fear expressed by farmers when it comes to applying fertilizer in the fall. Yet, from a common-sense standpoint, it is certainly better to risk the loss of a little nitrogen than to risk not being able to apply any at all in the spring because of wet fields or because the farmer may not be able to obtain the grade he needs during the spring rush. Anyway, any slight loss of nitrogen will often cost less than just one extra trip around the field in the spring.

The special section contains not only comments of agronomists on the technical side, but also some practical sales suggestions designed to be of help in putting over the idea of fall fertilization in local communities.

Many fertilizer suppliers have made available to their dealers, all kinds of sales helps ranging from radio scripts to little pamphlets designed to be mailed with bills in regular business envelopes. Large window or store posters, newspaper advertising mats and informative booklets are available from various suppliers. Their dealers are invited to send for these merchandising aids.

A "question and answer" page is also presented, which the dealer can use to advantage in replying to queries put to him by farmers. It is suggested that the dealer clip out the page and hang it on his bulletin board for every customer to see. It should help to create a favorable atmosphere for sales of fertilizer this fall.

Latin "Friends of Land" Get Lowdown on Fertilizer

In a recent speech before the "Amigos de la Tierra" (Friends of the Land) group in El Salvador, J. I. Rodale, outspoken U.S. advocate of using only "natural organic" means of growing agricultural crops, revealed some very enlightening facts about the attitude of his group toward the use of manufactured fertilizer products.

Mr. Rodale prefaced his talk by telling the El Salvadorans that it "becomes the patriotic duty of every one of you here to do all in your power to start a strong organic movement in your country . . ." Upon having accomplished this, and the rich results of organic farming become evident, he said, "what a joke it will be on your big brothers up North when . . . they wake up one fine morning to discover what tiny El Salvador has achieved. Then the big doctors from the Rockefeller Foundation and the experts from the United States Department of Agriculture will come running down here to find out what hit them."

The organic exponent then warned his Latin listeners not to follow in the footsteps of America. "It is with sadness that I see my country sending its agricultural experts to El Salvador to show you how to use chemical fertilizers when chemical fertilizers are destroying the soil of our own country. Did you know that in the U.S. at least 55% of our top-soil has already been destroyed by our chemical farming, that every year our floods are becoming worse and worse because chemical fertilizers harden the soil and do not permit the rain to be absorbed into it?

"Beware the Greeks bearing gifts, for behind these U.S. Government experts, come the chemical fertilizer salesmen, who make you pay large sums for your unneeded chemicals. Study this matter for yourself on a long-term basis. Demand proofs of these so-called scientists. They have never made comparative tests of the chemical versus the organic method . . ."

A question-and-answer session followed Mr. Rodale's talk, and he describes this part as being "very spirited." A chemical fertilizer salesman, he said, "saw an opportunity to demolish the effect I had produced," and proceeded to argue with the organiculturist. When the chemical salesman declared, "What difference does it make whether it is a chemical or an organic fertilizer? The organic matter breaks down completely into its various elements and is absorbed into the plant as chemical elements, not as organic matter," Mr. Rodale promptly told the salesman that such is not the truth.

The agricultural chemical industry is well acquainted with and reasonably tolerant of such heckling from the gallery, realizing that the results of this type of opposition must not be too effective so far as the over-all agricultural picture is concerned. The slight diminishing of fertilizer consumption in the U.S. last year was undoubtedly due to forces more formidable than the chatter of a few people who are against anything chemical on the farm.

Actually, the fertilizer industry is inclined to be more amused than alarmed at such anti-chemical outbursts. The attitude is similar to that exhibited toward the few die-hards who still use kerosene lamps or gas light for illumination . . . or who depend upon horse-drawn carriages for transportation.

We read the other day about a lady who rode a horse all the way across the continent. Took her nearly four months, but she made it.

The biggest difference between this type of stuff and that of the organic farming people lies in the fact that the lady horseback-rider makes no condemnation of other means of transportation. Mr. Rodale, on the other hand, along with many in his organic camp, kicks up a great fuss about the evils of modern agriculture's use of chemicals. It makes amusing reading, but we doubt that the USDA people whom he terms "so-called experts" are going to start handing in their resignations.

Nor is American agriculture going to collapse because of chemical fertilizers and insecticides!

Croplife

ABP Member of Business Publications Audit

NBP Member of National Business Publications

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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MEETING MEMOS

ly 25-27—Northwest Association of Horticulturists, Entomologists and Plant Pathologists Conference, Northwest Washington Experiment Station, Mount Vernon, Wash.

ly 26-27—Illinois Fertilizer Conference, University of Illinois, Urbana, Ill.

ug. 1—Kentucky Fertilizer Conference, Guignol Theatre, University of Kentucky, Lexington, Ky.

ug. 2-3—Nitrogen Field Day and Equipment Demonstration, Ohio State University, Columbus, Ohio.

ug. 14-15—Ohio Pesticide Institute, Summer Meeting, Ohio Agricultural Experiment Station, Wooster, Ohio, J. D. Wilson, Wooster, Ohio, Secretary.

ug. 17-25—Tenth International Congress of Entomology, McGill University and University of Montreal, Montreal, Canada, J. A. Downes, Science Service Bldg., Carling Ave., Ottawa, Ontario, Canada, Congress Secretary.

ug. 20-22 — Corn Belt Branch, American Society of Agronomy, Summer Meeting, Purdue University, Lafayette, Ind.

ug. 22-24—Beltwide Cotton Mechanization Conference, Atlanta Biltmore, Atlanta, Ga., sponsored by National Cotton Council.

ug. 24—Grassland-Dairy Feld Day in Observance of the 25th Anniversary of Rutgers University Dairy Research Farm, Beemerville, N.J.

ug. 28-29—Fertilizer Meeting, Nebraska Agricultural College, Lincoln, Neb. Sponsored by the Agricultural Ammonia Institute.

ug. 30—South Carolina Plant Food Educational Society, Clemson House, Clemson, S.C.

ept. 5-7 — National Agricultural Chemicals Assn., 23rd Annual Meeting, Essex and Sussex, Spring Lake, N.J., L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.

Oct. 9—Western Agricultural Chemicals Assn., Fall Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose, 28, Cal., Executive Secretary.

Oct. 15 — Fifth Annual Chemical Sales Clinic, Hotel Commodore, New York, Sponsored by the Salesmen's Association of the American Chemical Industry.

Oct. 15 — Fifth Annual Chemical Sales Clinic, the Salesmen's Association of the American Chemical Industry; Hotel Commodore, New York City; chairman, Preston F. Tinsley, Westvaco Chlor-Alkali Division, Food Machinery and Chemical Corp., 161 East 42nd St., New York 17, N.Y.

Oct. 16-17—National Nitrogen Solutions Assn., Annual Meeting and Trade Show, City Auditorium, Sioux City, Iowa; John White, Auburn, Neb., secretary.

Oct. 16-18—Fertilizer Industry Round Table, Shoreham Hotel, Washington, D.C. Vincent Sauchelli, Chief Agronomist, Davison Chemical Co., Div. W. R. Grace Co., Baltimore 3, Md., chairman.

Oct. 18-19—Association of American Fertilizer Control Officials, Shoreham Hotel, Washington, D.C., B. D. Cloaninger, Clemson Agricultural College, Clemson, S.C., secretary-treasurer.

Oct. 23-24—Pacific Northwest Garden Supply Trade Show, Shrine Auditorium, Portland, Ore.

Oct. 25—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. La Salle St., Chicago 1, Ill.

Nov. 2—Joint Agronomy-Industry Work Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Nov. 7-9—Agricultural Ammonia Institute, Annual Convention, Atlanta Biltmore Hotel, Atlanta, Ga., Jack F. Criswell, Claridge Hotel, Memphis, executive vice president.

Nov. 7-9 — Pacific Northwest Plant Food Assn., Annual Convention, Harrison Hot Springs Hotel, Harrison Hot Springs, British Columbia, Leon S. Jackson, Lewis Bldg., Portland, Ore., secretary.

Nov. 11-13 — California Fertilizer Assn., 33rd annual convention, Del Coronado Hotel, Coronado, Cal.; Sidney H. Bierly, executive secretary, 475 Huntington Drive, San Marino 9, Cal.

Nov. 19-20 — Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., secretary.

Nov. 28—Oklahoma Fertilizer Dealers Conference, Sponsored by the Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater.

Nov. 29—Oklahoma Soils and Crops Conference, Oklahoma A&M College, Stillwater.

Dec. 27-31—Entomological Society of America, Annual Meeting, Hotel New Yorker, New York City.

SEPTEMBER APPLICATION

"We frequently recommend an annual heavy September application of complete fertilizer for pastures . . . and immediate and additional nitrogen top dressing in mid-October and late February, instead of the annual complete fertilizer application in early spring. Oftentimes, the farmers who hold off until early spring do not get the fertilizer on early enough to obtain maximum benefit." —R. L. Beacher, supervisor, soil testing laboratory, University of Arkansas, Fayetteville.

CHEAP WINTER GRAZING

"Fall fertilization of small grains and winter pastures is an essential phase of our farm program in South Carolina. A very high acreage is expected to be seeded again this fall. The winter grazing program has also made great progress in this state and may be expected to continue. Liberal fertilization at seeding gives the grain and pastures an early start in growth which is essential for successful production. In addition, the small grain crop when properly fertilized may be expected to provide an abundance of cheap winter grazing in addition to a profitable crop of grain." —W. R. Paden, agronomy department, Clemson Agricultural College.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.

All Want Ads cash with order.

HELP WANTED

AGRICULTURAL GRADUATE, PREFERably with entomology major, to assist agricultural chemical sales manager. Excellent opportunity for young man to combine technical training with sales. Apply Thompson-Hayward Chemical Co., 2915 SW Boulevard, Kansas City, Missouri.

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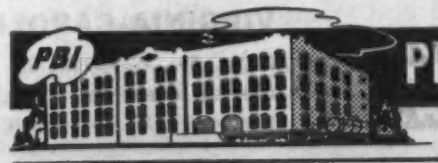

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